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COMPARISON OF LIDOCAINE INJECTION AM) ACUPUNCTURE TREATMENT TO TRIGGER POINTS IN MYOFASCIAL PAIN SYNDROME

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Abstract

The aim ofthis stud) was to compare lidocaine injection w ith traditional Chinese acupuncture treatment in cerv ical MI'S. 60 patients w ith cer\ ical MPS were treated and randomh assigned to two groups; lidocaine injection in 30. 63 I rP). traditional Chinese acupuncture treatment (n 30. 60TrP). Treatment effectiveness were assessed using hi' pain pressure threshold (PPT). pain score (I'S) and \ isual analog scales lor pain al the entry and end ol'the treatment Additionally, depression and anxietv associated with chronic pain were assessed using the Beck Depression Inventor) (BDI) and Taylor Manifest Anxiety Scale (I MAS). PP I and I'S improved in the lidocaine group, but not in the acupuncture group. Visual analog scores significant!) decreased in the both groups. The BDI scores indicated depression in 41.9% of the patients, with 14.6% ol'the patients having moderate depression. I ligh anxiety scores on the IMAS were present in 89.3% ol'the patients. When BDI and IMAS scores were compared with VAS and PIT levels, no signilicant correlations were found, but when compared with pain duration before treatment. correlations were signilicant 1 idocaine injection is more practical and rapid than acupuncture treatment and is more cost effective and seems the treatment of choice in MPS. Patients with myofascial pain syndrome had higher scores foranxiet) than for depression.

Key words: myofascial pain s) ndrome. trigger point, lidocaine injection, acupuncture

INTRODUCTION

Mill' has been defined as a hyperirritable location within a taut band of skeletal muscle libers that is painful when compressed and that give rise to characteristic referred pain, tenderness, and lightness. An active trigger point usual!) produces restricted range of motion and \ isible or palpable local twitch response during mechanical stimulation of the M HP. '

Neck and upper back pain is the most common complaint in MI'S because ol'the imolvemcnt of trapezius muscle in most cases. The prevalence ofthis syndrome has shown dramatic increase in recent years, and it is known to rank high among the other causes of musculoskeletal pain.

trigger points were primar) source of pain in 74%of96 patients with musculoskeletal pain seen b) a neurologist in acomnumit) pain medical center. and in 85% of 283 patients consecutive!) admitted to a comprehensive pain center. These epidemiologic studies that myofascial trigger point pain is an important source of morbidit) in the community.

Although M I rl's are widely recognized phenomenon in clinical practice, there remains much to be elucated with regards to their pathophysiology. mechanisms of pain referral, and treatment choice and there is no diagnostic gold standard and under explored hv research investigators.[5]

Several methods have been recommended for the inactivation of TrP. 1 he treatments most common!) utilized for this purpose are lidocaine injection and acupuncture.

I rigger point injections using various techniques have been wide!) used inactivate MTrPs. The mechanism of MTrP inactivation after injection is unknown, but Simons and Travel have suggested

several possible mechanisms: (I) mechanical disruption of the self-sustaining MTrP mechanism: (2) depolarization block of the nerve fibers by the released intracellular potassium: (3) washout of the nerve-sensitizing substances by the injected fluid or local hemorrhage; (4) interruption of the central feedback mechanism: and (5) local necrosis of the area of the MTrP by the injected drug.[7]

Acupuncture needling has both psychological and physiological effects that are described as either specific or non-specific. The specific effects, according to traditional and modern acupuncture theory, refer to alleviation of pain by needling of a specific site for an appropriate duration of time and for an appropriate number of treatments. The psychological nonspecific effects acupuncture relate to perceptions. beliefs, experience, and expectations.[8]

The aim of this stud) was to compare lidocaine injection w ith traditional Chinese acupuncture treatment in cervical MPS.

MATERIALS AND METHODS

This study was approved by the Human Subjects Review Board. Patients who met inclusion criteria were approached about participation in the study and were asked to give written informed consent. All participants were told that they could w ithdraw from the study at any time.

Sixty patients admitted to the outpatient clinic of the Department of Physical Medicine and Rehabilitation with TrP located on upper trapezius muscle, with disease of at least 1 month duration and not receiving any treatment during the pre\ ious 2 months, were recruited in this study. For comparison with contralateral side of the body, special attention was paid to patients with myofascial pain on only one side.

The diagnosis of an active myofascial trigger point in the upper trapezius muscle was based on the criteria described by Travel and Simons • '•' ": (1) tender spots in one or more palpable taut bands: (2) a typical pattern of referred pain in the ipsi lateral posterolateral cervical spine, mastoid, or temporal areas: (3) palpable or local twitch responses on snapping palpation at the most sensitive spot in the taut band; and (4) restricted range of motion in lateral bending of the cervical spine to the opposite side.

General design

The subjects were divided randomly into two groups, fhe 30 patients in group I (24 women and 6 men. mean age 40.0t7.6yr) were treated with 1% lidocaine injection therapy to trigger point. The 30 patients in group 2 (26 women and 4 men. mean age 40.3±7.9yr) were treated with Chinese acupuncture treatment to the cervical and shoulder region. All patients were questioned about onset and character of their pain, factors that could play a role in cause, sleep disturbance, association with occupation factors, level of education, and contributing and perpetuating factors. We did not include patients with cardiovascular or respiratory disease. allergies with injection to TrP. diagnosed with fibromyalgia, myelopathy with severe disk or skeletal lesions and did not cooperate well.

Measurement

Pain intensity was described by the patient using a 10 point visual scale, with 0 being no pain and 10 being the most severe pain ever experienced.

Pressure pain threshold (PPT) measurements used technique recommended by Fisher. '"''. In compare PPT values on affected sides with those on the health} sides, measurements were obtained from points exactly to the TrP.

Pain score (PS) measurements were obtained by placing the thumb to the skin covering the muse le containing the TrP in a perpendicular fashion and exciting pressure until there was whitening of the nail bed and then evaluating the pain intensity. Scoring was from 0-3 (0 no pain. 1 mild pain. 2 significant pain, and 3 severe pain resulting in jumping sign).

Depression and anxiety associated with chronic pain were assessed before treatment using the Beck Depression Inventory (BDI) and Taylor Manifest Anxiety Scale (TMAS) [u"\]

The measurements were obtained before treatment and 10 days after treatment for the evaluation of therapeutic efficacy.

Lidocaine injection method

Lidocaine injection of TrP was performed by the modification of techniques recommended by Travel and Simons.[14"7] The stretched band, that was localized between the thumb and index fiimer.

was entered rapidly, having the tip of (he needle perpendicular to the skin. The needle was inserted into the muscle until the exact TrP was reached. Alter injecting I ml of 1% lidocaine solution, the needle was moved backward and forward. Then the tip was withdrawn to the subcutaneous tissue. the injector was mildly inclined, and the sides and upper and lower parts of the first injection site were needled."""-" ":"[7]

Chinese acupuncture method

Needling was performed on acupuncture *on* acupuncture points in the neck, shoulder and upper back. On the basis of review of more than 20 historical and modern Chinese and English-language sources, six of the following acupuncture points were selected: left and right GB-20 (feng chi). left and right GB-21 (jianjing), left and right GB-12 (wang gu). left and right BL-10 (tian zhu), left and right Bl.-11 (da zhu). and GV-14 (da zhui); the seventh points are ashi. The selected points were palpated for accurate identification, and needles were inserted to a depth of 2-10 mm each-deep enough to touch or just penetrate the body of the underlying muscle mass The needles were applied for a total of 20 minutes.'[1]

Data analysis

Statistical analyses were performed with SPSS 1 1.5 for Windows. The mean percentage values of the changes calculated for both groups were compared using Mann-Whithey U tests. The paired / test was used for comparison of pre- and post-treatment values within groups. Any P value <0.05 was considered significant and r values >0.5 were considered to show significant correlation.

RESULTS

Comparison of the results before and at the end of the treatment after lidocaine injection is presented in fable I. In the lidocaine injection group, subjective pain is measured by Visual Analog Scale (VAS) showed significant decreases (P<0.05). When compared with pre-injection values. Pain pressure threshold (PPT) values showed significant increase (P<0.00l) and PS values significant decrease (P<0.05) in the 1st post-injection week.

Table!. Pre- and post-treatment values in the lidocaine injection group

	Before treatment (first visit)	Post treatment (second \isil)	*P* values
PPT (kg)	4.02±0.68 (3.10-5.70)	4.9±0.46 (4.5-6.1)	,001
Pain score (0-3)	2.87±0. (2-3)	0.9*0.6 (0-2)	.000*
VAS (0-10)	6.0:1.86 (3-9)	2.21 ±1.312 (0-4)	.000*

*Mean -SD lma\-iiuni. PPT-pain pressure threshold VAS-visital analog scale. *p O.tXH **/> 0.05*

The comparison of results before and alter acupuncture treatment is presented in fable 2.

When compared with pre-treatment values. PPT and PS scores did not show any significant change (P>0.05). But subjective pain on VAS scales showed significant decrease (P<0.05).

Tahle2. Pre- and post-treatment values in the acupuncture treatment group

	Before treatment (first visit)	Post treatment (second v isit)	P values
PP 1 (kg)	4.15±0.58 (2.5-5.5)	1.3:0.63 (3.0-5.2l	.248**
Pain score (0-3)	2.82±0.39 (2-3)	2.54*0.78 (1-3)	.058**
VAS (0-10)	5.2i 1.93 (3-8)	3.60* 1.72 (2-7)	.(10(1*

Mean i *S7.) (max-min). PPT- pain pressure threshold.* I. LS-*visual analog scale, *p trim l •* p 0.05*

Comparison of treatment results of the lidocaine injection and acupuncture treatment groups.

for PPT and PS values at TrP. there was no significant pre-treatment difference between the groups (p>0.05). but a significant difference post treatment in both groups.

A significant difference in TrP. PPT and PS values **at** the end of the treatment was observed between lidocaine injection and acupuncture group (P<0.05).

At the end of the treatment. VAS showed significantly decreased in the both groups. But com-

pari son of the both groups, in the lidocaine group. VAS values were significantly higher than in traditional acupuncture group.

The BDI scores showed depression in 27.4% of the patients (n 17) with 9.6% of the patients (n 6) reporting moderate depression. High anxiety scores on the TMAS were present in 89.3% of the patients (n =53). When 151)1 and I MAS scores compared with pain duration before treatment, correlations were significant (BDI. r 0.58; TMAS. r-0.62: I able 3)

Table.!. Correlations of depression ami anxiet\ as assessed b\ BDI and TMAS with duration of pain before treatment.

	Duration of pain
Beck depression inventor)	r- 0.58
I ay lor Manifest Anxiety Scale	r^0.62

rvalues •() ? were considered to show sifoiitlcant correlation

DISCI SSION

The results of this study show the possible short-term tlierapeutic effects of lidocaine injection and acupuncture in the treatment of myofascial pain

A muhidisciplinaiA approach is recommended in MPS. as the pain has a complex nature/ The mainstream of treatment is to break down the vicious cycle of pain through the elimination ofTYPs. There are different approaches for the treatment of MPS.[::] ' ' There is controversy in the literature concerning the potential efficacy of lidocaine.[r']

In our study, we aimed to investigate the differences between efficacies of local injection of lidocaine and acupuncture, these are commonly used in practice.

The patients who underwent treatment with lidocaine injection showed significant benefits as measured through subjective and objective indices and through myofascial TP characteristics.

Hong et al. reported that injection of TrP with 0.5% lidocaine decreased the myofascial pain effectively, increased the threshold of pain in TrP and increased ROM of the treated muscles.[25] The utilization of local anesthetics in TrP injections might decrease the sensation of discomfort.[2"] [:7] This can be explained b\ local anaesthetics lengthening the relative refractor) period of the peripheral nerves and limiting the maximum frequency of impulse conduction.

On the other hand, in our study, the group receiving acupuncture treatment did not show any significant improvement on PPT and PS. But in this group, variables such as pain measured by VAS showed decrease (P<0.05).

It has frequently been mentioned that patients suffering from myofascial pain for long periods might develop depression and anxiety.

Pshychosocial factors may contribute to muscle tension and inciease in pain and thus contribute to perpetuating chronic myofascial pain syndromes. Patients should be questioned about psychosocial issues and offered pshychological support when necessary.

In conclusion, lidocaine injection increases PPT and PS values more than acupuncture treatment. Acupuncture and lidocaine injections both had significant effects on VAS.

According to the results of this stud), we think that the decision for injection should include a local anesthetic rather than acupuncture because of its practical and rapid alteration, time consuming as well as cost effective.

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PHARMACOLOGICAL RESEARCH ON ARTEMISIA SPHAEROCEPH ALA (KRASCH) OF THE MONGOLIAN GOBI

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Abstract

Cell-surface polysaccharide chains are known to contribute to cell migration, and proliferation, but their roles in anti-inflammatory and anti-ulceration activity have not been revealed earlier. We investigated topical application on inflammation and ulceration, using "Wjstar" rats. In accordance with the reduced leukocyte infiltration, exudation levels'" rats, were observed. Mononuclear cells recruitment at inflammation sites was also impaired in ihis rats. Rats showed significant delayedanti-ulcer activity with reduced re-epitheliali/ation.and angiogenesis. compared with the control rat. This study demonstrates a suitable model using rats for investigating the molecular mechanisms of protective lining (mucosa, submucosa). the first report showing that polysaccharide chains have a strong regeneration of mucous epithelium. The effect of polysaccharide preparation lo improve surface regeneration related defends on the functional group in its content such as monomers with uronic acid, and xylose and protein molecules.

Key words: *Artemisia Sphaerocephala (Krasch). Artemisia Peclinala and Compositae*

INTRODUCTION

Native plant. *Artemisia sphaerocephala Krasch (ASK)* is rich in resources and highly contain polysaccharide that grows widely in the Mongolian gobi. Reports on seed mucilage containing polysaccharides could not be found in literature of Ayurvedic and Tibetan-Mongolian traditional medicine.

Substantial evidence is provided to support claims of positive effect of polysaccharide preparation's on inflammation. In addition to this it was proven that polysaccharide preparation could influence acute joint inflammation, and peptic ulcer.

Investigation in situ is devided into exudative. proliferative, and alteration phases. In the exudative phase, the accumulation of leukocytes such as neutrophils and macrophages are at the inflammation site[1]. In the proliferative phase, the migration and proliferation are in re-epithelialization and tissue granulation[2]. In the alteration phase, excessive collagen at the inflammation site is degraded by several proteolytic enzymes, leadingto the completion of tissue repair.[14] Pathological action of gastric mucous damage (GMD) immediately starts after an injury and proceeds with a complicated but well-organized interaction among various types of tissues and cells [5'].

Gastric ulcer, which is based on GMD, has increased among the population in the past years . and about 10% of the population of developed countries is suffering from this disease*. *ASK* is easily soluble in water assuming gel-form with high viscosity. This became one of the basis for selecting the research. Besides providing bicarbonate synthesis, gel-like preparation neutralizes hydrochloric acid. With forming of gel. the reabsorbing of hydrogen ions is reduced".

The main factor for pepsin to form ulcers comes from the action of acid and Helicobacter pylori. This proved true in 70% cases of gastric ulcer and 90% cases of pyloro-duodenal ulcer '". The particular feature of Helicobacter pylori is to cause damage of the mucous ".

The main purpose of the study is on the influence of polysaccharide preparation derived from seeds of *Artemisia Sphaerocephala Krasch* on

the pathological model of gastric mucous damage (GMD).

MATERIALS AND METHODS

The experiment was carried out at the Research Center for Hxperimental Biology of Ulan-Ude. and at the Traditional Medical Science I echnology and Production Corporation of Ulaanbaatar.

The influence on inflammation exudation

1 20 experimental rat weighing 160-1 80 g were selected for the study. During studying the inflammation effect of polysaccharide preparation first we inoculated under the skin of paws of rats, by injecting 0.1 ml 2% formalin solution. After the injection, at 5'" and 8'" hours the preparation in the same doses were given orally. After 24 hours of formalin application, the animals were slaughtered and the percentage of inflammation exudation was determined by oncometer''. Next we used the preparation at a dosage of 30 mg/kg. The control group received distilled water.

The influence of alteration

I he experiment was carried out on 120 male white rats weighing 1 60-180 g. Inducing alteration. acetic acid at 0.5 ml-9^{0}<;> under the surface of skin. and 300 ml/kg dose of De.xtran solution on abdomen were injected respectively.

The experimental animals were given 30 mg/kg of preparation 1 hour prior to the application of vinegar acid, and continued to receive the preparation for 25 days. The compared animals were given Butadion in a dose of 50 mg/kg, and the control group received distilled water. The level of dying surface was measured on the 9'" and 29'" days of the experiment[1'].

The peritonitis deficiency model

The study was conducted on 120 white male rat weighing 160-1 8Ug. The effect of polysaccharide preparation on induced experimental peritonitis was examined on the abdominal cavity of rats. of the injection of nitrate silver at 1 ml of 0.2% aqueous extract. The experimental group received polysaccharide preparation orally in dose of 30 mg/kg 30 minutes prior to injecting nitrit silver solution. To the compared group. Butadion was given in dose of 50 mg/kg. Three hours after the application of mil ite solution, the animals were slaughtered Epiploon was solidified in a Camao solution, and painted on 0.05% solution of blue toluidin".

The pathological model of gastric mucosa damage

The basics of initiating a "'Pathological model of acetate ": The method[1,] is damaging the gastric mucous with acetic acid. 115 experimental rat weighing 200-220 g were selected for the study.The polysaccharide preparation was used in 30 mg/kg doses, and provided 7.14 and 21 days of observation. Hystomorphological investigation was conducted the purpose of determining mucosa protection activity "'

After 7. 14. 21 days respective I) the animals were slaughtered and the material was extracted. and transferred from the gastric ulcer. By nonoiling transmitter 2 hours in Karnau solution, during 12 hours in 96" spirit and. 6 hours in xylol. To solidify: In Paraph in for 90 min. Each paraffin block was prepared by transferred ulcer tissue. The block was kept frozen. After this process, they were cut on microtome by three microns, each were pasted on glass plates and were kept at 50" C for 24 hours for drying. After drying prepared . in xylol Ill - 5 mm. xylol II -5 mm. xylol I - 5 mm. 100"ABSOl. ABSOII.ABS()lll.96"ALC.9() Al C . 80 ALC. 70" ALC were transferred for 3 min respectively, rinsed in distilled water, and in pi I 4.8 acetate buffer.

The substance were colored in hematoxylin and eosin /H&H/ (25 min). and were rinsed with acetate buffer of pi I 4.8. and were kept for drying. Continued rinsing in 93"spirit ofethanol. Transferred in xylol in Ill - 5 min. xylol II - 5 min. xylol I - 5 min. respectively. At the end of this process, balsam was applied to the preparation, kept at 50" c for 72 hours.

The most effective period of polysaccharide preparation on the animals was observed using an "Olympus" microscope and coloring with hematoxylinand eosin (H&li)-

Statical Analysis

Statistical differences were determined using the SPSS-10 test or analysis of variance. All data are presented as the mean ± SEM. A *P* value <0.05 was accepted as statistically significant.

RESULTS

Decreasing inflammation exudation with the administration of polysaccharide preparation.

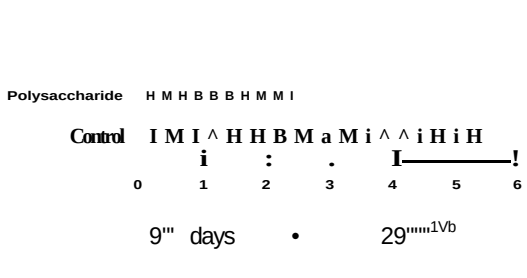
Experimental rats weighing 160-180 g were selected in the study. The animals were killed and the percentage of inflammation exudation was determined by oncometer. Defining the percentage of inflammation fluid in the experimental animals were lowered b\ 44.5% compared to the 3 control group of animals. In the next round we studied comparing w ith some of the compounds, which reduce inflammation process.

Percentage reducing inflammation fluid on control. experimental animals were compared with of Butadion medicine animals". The animals which had pofysaccharide, had decreased inflammation by 41%. where as butadion only showed 33.4%. I he test showed positive effects of polysaccharide preparation in decreasing fluid contents and inflammation during septic inflammation induced by formalin in paws.

Study of polysaccharide preparation on the Stage of alteration.

The experiment was carried out on 120 male wistar rats weighing 160-180 r. 1 he animals were given 30 mg/kg of polysaccharide preparation 1 hour prior to application of acetic acid, continuing for 25 days. The compared animals were given butadion in a dose of 50 mg/kg. and the control group received distilled water. The dying surface level was measured on the 9"' and 29'1' days of the experiment. (Figure. 1)

Figure 1. Effect of polysaccharide preparation of seeds *ASK* on alteration stage induced in experimental animals



The comparative result of Alteration level measurement of the control group.

On the 9"' days, the result of death Held level in experimental animals compared to the control group was 55%, and on 29"'days again compared to control group the dy ing field level of experimental animals were reduced to 21.0% respectively.

Judging from the result, polysaccharide preparation of *Artemisia Sphaerocephala Krasch* in alteration, prevented destruction of tissue, and showed positive effects in healing of dying process.

Study of polysaccharide preparation on peritonitis deficiency model.

The study was conducted on 120 white male rat weighing 160-180gr. The experimental group received polysaccharide preparation orally in dose of 30 mg/kg, 30 minutes prior to injecting nitrite silver solution. To the compared group butadion was given in dose of 50 mg/kg. Three hours after the application of nitrite solution, the animals were slaughtered and epiploon was solidified in Carnau solution, painted in 0.05% blue toluidin.

Table I. Effect of polysaccharide preparation of seeds *Artemisia Sphaerocephala Krasch* on abdominal exudation and mononuclear cells during peritonitis induced in rats

>9	Groups of animals	Peritoneal liquid (nil)	Monunucl ear cells
1	Control (IfO)	O 70 + 0.03	2X8 ±26.7
2	Polysaccharide obtained with hut water (30 mg/kg)	0.52 ± 0.04 p<0.01	240 ±3.6 p > 0.05
3.	Polysaccharide obtained with cold **water** (30 mg/kg|	0.32 ± 0.04 p< 0.001	64 3 t4.4 p < 0.001
4	Butadion (50 mg/kg)	O 36 ± 0.02 p-- 0.001	85 ± 9.0 p<. 0.001

From this table we can see the effects of reduction of inflammation exudation in animals that used polysaccharide preparation is 55%. and that of butadion is 49%. Also showing efficiency of polysaccharide preparation to be higher thanthat of butadion (Table 1).

The polysaccharide preparation applied on experimental animals compared to mononuclear cells is 77% and butadion is 70%.

Research on experimental animals with induced GMD.

On the experiment on wistar rats weighing 180-

200 gr. Rats were narcotized and treated w ith acetic acid gastric serous induced pathological model of "Gastric mucous damage" /GMD/. After that on above-mentioned days of the experiment rats were slaughtered and researchers conducted observation for the onset of damage, its process and complications.

from the day of initiating GMD 1% preparation of *Artemisia Sphaerucephala Krasch* was given in 30 mg/kg doses to experimental animals and they were observed for 7-21 days. The main complications occurred to control group animals during the experiment were malabsorption of meals. full stomach, loss of weight, with rumbled hair and adhesions in stomach.

Sizes of GMD-d area were determined by histological investigation and were compared to each other.

Samples of ulcer tissues were fixed overnight in 4% formaldehyde buffered with phosphate-buffered saline (PBS) (phh 7.2). and embedded in paraffm. Sections (3 u.m thick) were exposed to hematoxylinand eosin(H&E)

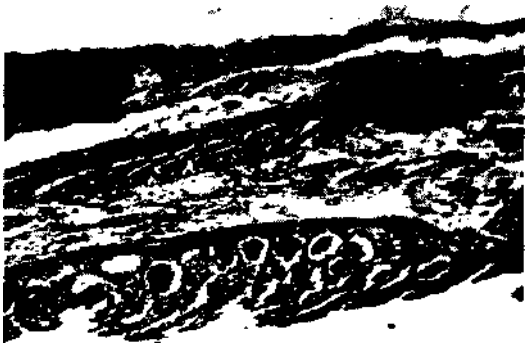
Figure 2. Gastric serous of control group animal was swollen, necrotized and interstitial tissue was destructed. (7^{Ih} days)

Coloring: Hematoxylin eozine. Magnification 20x10

Subserosal blood vessels were dilated and full of blood, as well as walls of vessels were necrotized, lumen were corked up with thrombi consisted of blood cells.

Muscular and serous layers were necrotized and inflamed. Opposite to damage muscular connection of muscle bundles was feared off and became were scarce and swollen and there is a little amount of infiltration of inflammation cells. Opposite to necrotic area of serosa, glands of mucosa were separated (necrotized) and injury appeared on mucosa. There was a multitude of inflammation cells at the bottom of acute injury appeared. Gland cells at the edge of injuries were distinguished, but their cavity was dilated and form was changed

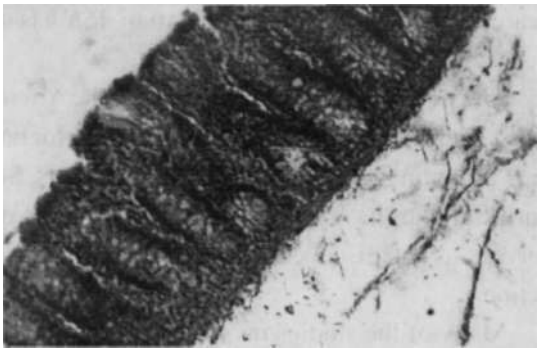
Figure 3. Regeneration of gastric wall glands of experimental animals. Coloring: Hematoxylin eozine. Magnification 10x10.



Microscope finding of injures on the 14"' day after giving preparation to experimental animal. There was still inflammatory infiltration in the mucosa, but an obvious picture of regeneration of glands from fovoela of mucosa. Was observed serosa is significantly thicker with many capillary-like vessels and vessels are bloody, thin-fibred connective tissue growth is seen around vessels. Also thereare oval-shaped, spindle-shaped cells w ith swollen clear kernel and pink plasma. One kernel cell infiltration consist of cells with round-shaped and kidney-shaped kernels (figure3) like scare or regeneration tissue.

Cylindrical cells of superficial epithelium are covering over glandular epithelium.

Figure 4. Picture of regeneration of glands of gastric mucous.Coloring: Hematoxylin eozine. Magnification 10x10



Results of healing sores in experimental animals. compared to that in the control group: hystomorphological investigation shows that regeneration of gland epithelium is completed and sores healed during 21 days.

DISCUSSION

Artemisia Sphaerocephala (Krasch) is confirmed family of (*ompositae,* which is widespread large areas of the Mongolian gobi desert. The species is high content of polysaccharides with medicinal properties, and comparative by low toxicity.

Polysaccharide preparation reduces amount of inflammation fluid and has active anti-inflammatory action when it is used for aseptic inflammation induced by formalin in the skin of toes in rats.

Comparing experimental animals which used preparation obtained from high molecule polysaccharide of *ASK* to control group and comparative group animals shows, that this preparation has intensive effects of the reduction of necrotic process and inhibition of tissue destruction during alteration period induced by acetic acid.

The study of anti-inflammatory action of polysaccharides of *ASK* on the pathological model of peritonitis shows, that it reduces the permeability of vessel wall, has positive effect on microcirculation and relatively the number of mononuclear cell in inflammatory environment.

The effect of polysaccharide preparation from seeds of *ASK* is explained by its adaptogenic action.

Therefore, conducting pharmacological study of *ASK* opens a possibility to produce on ecologically pure product with high content of sugars in seeds with specific, multiple features.

It is significant to find possibilities to develop new preparations for the treatment of gastric ulcer and gastritis on the basis of pharmacological research on polysaccharide preparation *ASK* has not been studied for this use before.

The polysaccharide preparation of the Artemisia Sphaerocephala Krasch has a reputation for both anti-inflammatory and anti-ulceration effects. Scientific studies have confirmed or refuted these observations and discovered possible mechanisms of action.

Many of the studies on polysaccharide preparation have been conducted on laboratory animals. And future research on the gel procedure of *ASK* could lead to improved pharmaceutical products. The reported remedial effects of *ASK* look promising for future clinical use in treatment for patients with gastric ulcers and chronic detective healing of wounds.

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LARYNGEALCANCER IN MONGOLIA

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Abstract

Discription of the patient population suffering from laryngeal cancer are not common in Mongolia. This article deals with the clinical features, treatment and results of 245 cases of laryngeal cancer treated during last 10 year period . In this series. 78.3% of the patients were in advanced stage (T3-T4) at the lime of diagnosis. Two hundred fourty live cases were identified with a male-to-female ratio of 4.4:1. There was significant trend of an increasing proportion of cases attributable to women. Glottic carcinoma accounted for 38.4 % of cases We concluded that, early cases (11-2) respond well to radiation therapy with or without cordectoniy. Advanced cases (T3-4) responded best when treated with surgery, followed by radiation therapy.

Key words: laryngeal cancer, squamous cell carcinoma, laryngectomy, cordectoniy

INTRODUCTION

Laryngeal cancer accounts for approximately 1.2% of all new reported cancer cases nationwide. Age standardized incidence rates ranged from 2.5 to 1 7.1 per 100000 person-years at risk in men and from 0.1 to 1.3 per 100000 person-years at risk in women in European and Asian countries.[1] •'"

Laryngeal cancer has not been systematically reported in Mongolia. The morbidity of cancer in Mongolia is felt to be increasing as the result of an increase in smoking, alcohol consumption and air pollution. We would like to present the clinical features, treatment and results of 245 cases of carcinoma of the larynx treated at the ENT-Head and Neck Surgery department of the Central University Hospital of Mongolia and the Head and Neck Surgery department of the Mongolian Oncologic Center, from 1995 2004. We describe herein the characteristics of the patients and the results obtained with different types of therapy.

MATERIALS AND METHODS

The medical records of 245 patients who presented with carcinoma of the larynx to the Central University Hospital of Mongolia and the Mongolian Oncologic Center from 1995 to 2004 were reviewed. All patients were assessed initially by physical examination, complete blood count, biochemical profile, chest x-ray, lateral neck s-ray with soft tissue technique, larynx CT scan and direct laryngoscopy. Since 2000 videolaryngostroboscopy was added to the assessment regime. All patients had biopsy proven invasive squamous cell carcinoma (96%). adenocarcinoma (1.2%) or sarcoma (1.2%). Patients with a second primary tumor were excluded from the study.

Patients were classified according to the American Joint Cancer Commission (AJCC) Guidelines 2002. Patients with Tl -N0-M0 tumors were treated with radiotherapy 40-50 Gray (Gy) in a reduced field (5x5cm). T2 tumors were treated with a cordectoniy and radiotherapy to the middle jugular node chain. T3-N0 and T4- NO tumors were treated with 60-70 Gy of radiotherapy to the whole neck for 6-7 weeks and rescue surgery was used for suspicious or proven persistence and recurrent disease. Patients with T3-4 tumors with positive resectable nodes had a total laryngectomy and radical neck dissection as their initial treatment. T3-N0 tumors were treated with 50 Gy preoperative radiotherapy to the whole neck over 5 weeks. One

month later a total laryngectomy was performed Patients treated with chemotherapy received 90-100 mgofcisplatin during radiotherapy.

T3-4 N'0-2 tumors were treated with total laryngectomy. Some of these patients received chemotherapy as palliation for inoperable tumor or who had distant metastasis.

RESULTS

This study included 200 men (81.6%) and 45 women (I 8.4%). a ratio ol 4.4:1 The patient's age ranged between 27 and 91 years, with a mean of 63.79 +/- 10.2 years. The highest incidences occurred in the llfth.sixth and seventh decades of life. There were three patients (1.3%) less than 40 years of age. Looking at occupations, drivers accounted for the highest frequency (26.9%). followed by unemployment (24.5%) and farmers (7.8%). Patients who were smokers accounted for 94.3% of the 245 cases. Patients with a history of alcohol consumption were divided into four levels: 1) None. 2) occasional. 3) moderate and 4) heavy. Patients who drank a moderate amount of alcohol accounted for 29.4% of the patients and those who drank heavily accounted for 29% of the (total) patients. The origin of the tumor could be determined in 76.7% of the cases. The most common site was glottic. 94 cases (38.4%). supraglottis 74 cases (30.2%). subglottic. 1 5 cases (6.1 %) and transgenic. 5 cases (2%).

In the remaining 57 (23.3%) patients it was not possible to determine the site of origin because all three glottic sites were affected. In 187 (76.3%) patients the lesions were exophytic, in 28(11.4%) endophytic and in 30 (12.2%) cases it was not determined.

Using the 2002 American Joint Cancer Commission classification for squamous cellcarcinoma. 10 (4.1%) of the patients were classified as T1, 35(14.3%) as T2, 131 (53.5%) as T3 and 61 (24.9%) as T4. In 144 (58.8%) patients there were no palpable lymph nodes. The nodes were less than 3 cm (N1) in 69 (28.2%). 3-6 cm (N2) in 29 (11.8%) and greater than 6 cm (N3) in 3 (1.2%) patients. In 12 patients there were bilateral nodes present . The presence of nodes correlated with the size and site of the tumor. In patients with a T1-T2 lesion involving the supraglottic region. 4(5.4%) had palpable nodes. In patients with a T3 lesion 36(48.5%) had palpable nodes, but in 14 lesions only 10 (13.4%) had palpable nodes (Table 1).

Table I. Stages in supraglottic tumors

	NO	M	N2	N3	Total
II					
T2	3	2	2		7
13	20	26	9	1	56
14	1	5	4	1	II
Total	24	33	15	2	74

In patients with T1-T2 lesions of the glottic region. 1 (1.1%) had palpable nodes and in T3 lesions. 12(12.7%) had palpable nodes, in T4 lesions only 6 (6.4%) had palpable nodes (Table 2).

Table 2. Stages in glottic tumors

	NO	Nl	N2	N3	fatal
Tl	9				9
12	28	1			29
13	37	12			49
14	1	6			7
Total	75	19			94

In the 1 5 patients with subglottic lesions, eight had palpable nodes. Invasive squamous cell carcinoma was found in 237 (96%) of the patients, carcinoma in situ in two. adenocarcinoma in three and sarcoma in three for a total of 245 cases. Thirty-three per cent of the squamous cell carcinomas were well differentiated and 32.2%) moderately differentiated. One hundred twenty (49%) patients had surgery as part of their treatment: 1)71 (29%>) had a total laryngectomy. 2) 14 (5.7%) a partial laryngectomy (and) 3) 6 (2.4%) a cordectomy. In 1 20 patients who underwent surgery, 47 (39%) had a unilateral neck dissection (30 cases), a bilateral neck dissection (6 cases) or a selective neck dissection (11 cases).

One hundred fifty one (61.1%>) of the patients had radiation therapy which was completed in 110 cases, but a full course could not be completed in 41 patients. The relative high drop out rate for completion of radiation therapy was due to many patients being from the countryside and deciding not to complete therapy because of distance from family and having to live in the city for a prolonged period of time.

Chemotherapy was administered to 77 (31.4%) patients dur.ing radiation therapy, but only 24 received the complete treatment as planned because the patients refused to complete the lull course. This treatment was used in onl) 13 and 14 cases In 112 (45.7%) patients some type of combined therapy was used, which included surgery-radiation. radiation-chemotherapy or surgery-radiation-chemotherapy.

There were 19 (7.8%) patients who initially presented with severe respiratory distress and required a tracheotomy for airway control before treatment was initiated.

Of the 103 (41.6%) patients who died. 4 1 (39.8%) had locoregional recurrence. 10 (9.7%) cases had distant metastases (mostl\ to the lung). 4 (3.8%) had a second primary in the head and neck region. 38(35.1%) had an intercurrent illness. and 10 ((9.7%) died in the postoperative period.

DISCISSION

I he proportion of male patients (81.6%) in our study is similar to that reported by Kwang el al in Korea (83.7%). (I) The male to female ratio of 4.4:1 is similar to the ratio of 4:1 found in the USA (2). In some reports there was an even more pronounced male predominance, such as in Mexico (7.3:1). Poland (9.1:1). Kirghizia (9.5:1), Korea (9.5:1) and Japan (13.1:1).[M]

The sixth decade accounted for the highest incidence (45%) followed by the fifth (22.9%). and the seventh (22%). which is similar to the reports from Korea, Japan and Hong Kong '•"".

Ninety four percent of the patients had a strong smoking history. Laryngeal cancer had a statistically significant relationship with smoking and alcohol abuse (Pearson chi-square. p<0.01). The point of origin of the tumor in the larynx was difficult to determine in many of our patients because the majority arrived in advanced stages (13 or T4) and three levels of the larynx were involved.

The proportion of advanced cases in our cohort was 78.3%, which is similar to that reported in India (76.9%), but greater than that reported in Mexico (68%). Glottic cancer was the most frequent (38.4%) and was similar to the 42.4% reported in Korea.'

The fact that the percentage of palpable cervical nodes increases in proportion to the size of the tumor and the greater rate of cervical metastasis in the supraglottis is greater than in the glottis, confirms the difference in the lymphatic drainage of the glottis and the supraglottis.

In our series, cervical node metastases responded only partially to radiotherapy, because persistent tumors were detected at the end of treatment in 21 N 1, N2 and N3 cases, for this reason we concluded that patients with cervical nodes should have surgical therapy first, followed by postoperative radiation therapy.

In conclusion, earl) cases (II -2) respond well to radiation therapj with/or without laser cordectomy. Advanced cases (J 3-4) responded best when treated w ith surgery, followed by radiation therapy.

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GENE EXPRESSION PROFILING OF HEPATOCELLULAR CARCINOMA

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Abstract

Hepatocellular carcinoma (HCC) is one of the most common malignances in Mongolia. HCC is a multiple process associated with changes in gene expression. The gene expression profiles have not been studied yet in HCC and it also holds to the other cancers in Mongolia. In this study we tried to use differential display (DD) method to examine differences in gene expression between normal and cancer samples. We compared cyclinDl. cyclinE, c-myc. Rb gene expressions between normal and cancer cell of HCC. Analysis of expression cyclin Dl. we revealed overexpression in 40% (6/1 5), overexpression ol cyclinE 46.6% (7/15) and significant overexpression c-myc in 60% (9/1 5) in tumorous cell of HCC .In contrast, from other genes, the tumor suppressor Rb gene was downexpressed 33.3% (5/15) in tumor cells of HCC.

Key **words:** RT-PCR, cyclin Dl. cyclin E, Rb. gene expression

INTRODUCTION

Hepatocellular carcinoma (I ICC) is among the eight most common cancers worldwide and its incidence is still rising in different countries. This malignancy is less common in Western developed countries such as the United Stales. Australia, with an incidence of 2.8 to 6.1 per 100.000. it is endemic in sub-Saharan Africa. China, laiwan. where the incidence is between 20 to 100 cases per 100.000 population [1] \ In Mongolia. I ICC is one of the most common cancers with an incidence of 47 cases per 100.000 population (statistical date of cancers 2002) per year.

HCC is frequently associated with chronic liver diseases including cirrhosis'. Epidemiological studies have established that chronic infection of hepatitis B virus (HBV). and to certain extent, hepatitis C virus (HCV) . exposure to dietary aflatoxin Bl contamination and intake of alcoholic beverages are important risk factors for the development of HCC[4568]. Furthermore, a synergistic interplay between HBV and AIB1 and between IICV and alcohol abuse has shown [7].

The molecular mechanisms of HCC are not well understood, although multiple genetic alterations are often present. In comprehensive allelotype studies of HCC associated with different risk factors, it was shown that chromosomal localized on chromosomes 1 p. 4q. 6q. 8p. I 3q. I 6q. 1 7 p[1;1;1;] * arc frequently founded in HCC. Mutations of p53, Rb and b-catenin have been reported in human HCC i:.u.is.**i6.:9** Overexpression of c-myc and cyclinD are frequently involved in HCC [1;]. In addition, several growth factors play important role to the development HCC, including TGFa.b, IGF2 [17;].

The newly developed technologies such as cDN A microarray for global gene expression demonstrate a promising future for the study not only HCC but also in other cancers [1;1;] \

The use of gene expression profiling is important in cancer. The global gene expression-profiling model allows for identifying a potential for developing HCC, malignant progression of cancer and prognosis to adjuvant therapy.

Several techniques are using to monitoring gene expression, unfortunately in Mongolia is unavailable.In this study we try to use differential display (DD) method to examine differences in gene expression between normal and cancer samples. We compared cyclinDl. cyclinE. c-myc.

Rb gene expressions between normal and cancer cell of IRC.

MATERIALS AND METHODS

We obtained liver biopsv specimens (normal and cancer regions respective!}) from 15 hepatocellular carcinoma patients, where were hospitalized in the National Center of Oncolog) from 2002 to 2004 Tissue biopsies were stored at 70 C until analysis. All biopsv specimens included in the stud) were examined under a dissecting microscope. I issue mRNA was isolated bv Roche firm High Cure niRNA isolation kit (Cat. *N*». 1828665). For comparative studv gene expression of normal and tumor tissue, we performed b\ RI-PCR Aftei isolation mRNA . following isolation of cDNA were performed bj reverse transcriptase polymerase chain reaction. Amplification was performed in 50 ml reaction volume containing IN RI-PCR buffer. 0.5m\l MnSO . 2()()mM dN IP. 0.5pmolesoligod I. 5ml RNA.2.5L' I tliDNA polymerase (Roche).25U RNase inhibitor. I he cDN A samples were balanced with Ml buffer (lOmMI ris. ImMEDTA).

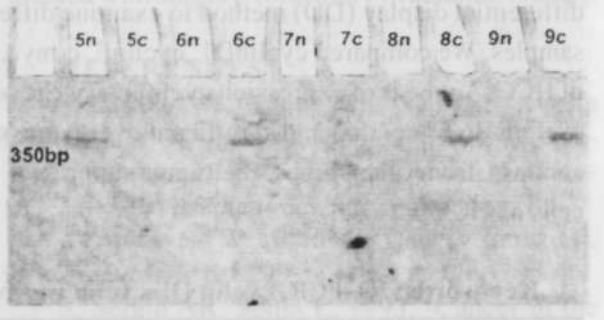
After isolation cDNA bv using specific primers (lablel) were amplified cDNA bv common PCR. DNA (IOO-200ng) was amplified bv polymerase chain reaction (PCR) bv using DNA thermal cycler (Primus evolution 1906). Oligonucleotide primer sequences were synthesized in Cosmo Genetech Company (Korea). Polymerize chain reaction amplification was performed in 20 ml reaction volume containing 2mM MgCL 200mM of each dNTP(dAI P. dG IP dC IP. d I I P). 5 pmoles of each oligonucleotide primer. 0.5U Taq DNA polimerase . The amplified products were visualized on silver staining 8% polvacrilamidegel.

Tabic 1. Primers used for PCR amplification

RESULTS

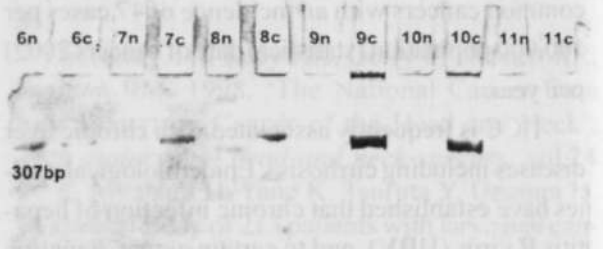
Cyclin Dl is one of the essential factors in regulation of cell cycle. Deregulation of expression cyclin 1)1 is observed in several human cancers.'[1] Among the 15 samples cyclin Dl overexpression were detected in 40% (6/1 5) of cancer cell different from normal cell of hepatocellular carcinoma (Figure I)

Figure 1. **Comparison of cyclin Dl expression of 1 ICC. 5-9n patient's normal samples. 5-9c patients cancer samples. sni-si/e marker. 5n,6c.8c.9c-overexpression of cyclin D1.**



Other factor that is essential to regulating the cell cycle is cyclinE. Cyclin I. plays an important role in the switch between proliferation and differentiation. We found overexpression of cyclin 46.6% (7/15) in tumors cell of IICC (Figure 2).

fiigurc2. **Cyclin E expression of IICC. 6-1 In patient's normal samples. 6-1 lc patients cancer samples, sm-si/e marker. 7c.8c.9c.10c-overexpression of cyclin E.**



Compared to c-myc expression in tumors and nontumors tissues of I 5 cases, we demonstrated significant overexpression 60% (9/15) in tumors cell of IICC. C-myc RNA was downexpressed in normal liver. In contrast of other genes such as cyclin Dl. cyclinE, Rb. p53 the overexpression of c-myc was higher when others (Fig.3). In contrast, from other genes, the tumor suppressor Rb gene was

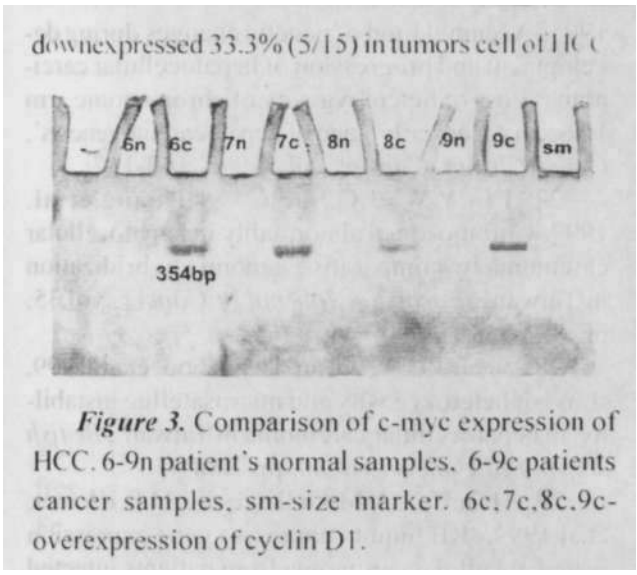


Figure 3. Comparison of c-myc expression of HCC. 6-9n patient's normal samples. 6-9c patients cancer samples. sm-size marker. 6c,7c,8c.9c-overexpression of cyclin D1.

ft i I *m*

Figure 3. Comparison of e-mye expression of HCC. 6-9n patient"s normal samples. 6-9c patients cancer samples, sm-si/e marker. 6c;7c,8c.9c-overexpression ofcyclin 1)1.

DISCUSSION

Mutational activation of b-catenin and cyclin Dl overexpression is a frequent change in mouse hepatic cell. I ranslocation of b-catenin to the nucleus and its association with high mobility group domain factors Tcf/LEF causes transcriptional activation of target genes, including the c-myc and cyclin I) 1^{K}" ''. In current study, the overexpression ofcyclin Dl was detected 40% (6/15) in tumors of *WCC.* The overexpression ofcyclin Dl in HCC also have been detected in other investigations ".

Woodchuck hepatitis virus (Wl IV) and ground squirrel hepatitis virus (CiSI IV) both develop hepatocellular carcinoma. but Wl IV-associated tumors arise more frequently and much earlier in life.'[7] WHV and GSHV have demonstrated that viral DNA integration sites are myc family genes. The rearrangement and overexpression of c-myc were first observed in HCC.[38] The integration of HBV DNA near myc family genes has never been described in human HCC but some studies shown the induction HBx antigen to c-myc-induced liver oncogenesis in transgenic mice"'. We demonstrated. the overexpression c-myc was detected in 60%(5/15) of tumor cell of HCC. This is suggesting, that overexpression c-myc in HCC plays important role in hepatocarcinogenesis.

The Rb gene has been implicated in negative growth regulation and in the inhibition of cell transformation. In our study, we detected downregulation of Rb in 33.3% (5/15) HCC. The strongly downregulation of Rb gene in 20-50% also has been detected in other study[36]. Allelic loss at the Rb locus has been observed in 26-48% of human HCC

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THE AMINO ACID AND MINERALCOMPOSITION OF *SAUSSUREA AMARA (L.) DC* FROM MONGOLIAN FLORA

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Abstract

The contents of free amino acids and macro-, micro-elements in *Suussurea amara <!..) DC* were analyzed. The total content of seventeen kinds of free amino acids is 9.045 mg 100 mg. The prevalent free amino acids are aspartic acid and proline in *Saussureaamara* (L.) DC. Furthermore Na. K.Ca, Mg. l-'e. Al. Cu, Zn. Mn. Ni and Pb in *Saussurea amara* (I..) DC have been investigated. The content of the elements followed the pattern: K > Ca > Mg > Na > Fe > Al.

Keywords: *Saussurea amara (L.)DC,* amino acid, macro, -micro elements

INTRODUCTION

The genus *Saussurea* is represented by 42 different species from Mongolian flora[1].

S.involucrata S.amara, S. salicilifblia are widely used in traditional medicine under the name "Banzidovoo"' '.

Tibetian and Buriadian researchers call it as Banzidovoo", and Innermongolians- "I ug/idovoo" and "Khaldargana'*. "Banzidovoo"' is included in traditional prescription: "Banzdoo-12". "Banzdoo-2". "Banzdoo-3"."Banzdoo-4"."Banzdoo-6". ""Khongolzuur-11". "Banzdoo-12". "'Dalanturuu-15". "Gavar-23". "Tsetseg-3" and "Chonon khel-13"

In Tibetian medicine, the "Banzidovoo" root is used for fevers, rheumatism and hemorrhages. The herbs are used for the treatment of diarrhea. infectious diseases, intestinal typhoid and cardiovascular diseases. The multicompositional prescription with "Banzidovoo" are used for bile tract disease. stomachache, lung abscess, hemorrhages and liver cirrhosis".

Saussurea amara (L.) DC contains according to literature. cynaropicrin and desacylcynaropicrin, sesquiterpene lactones. hydroxymcthyl analog and the flowers contain 7.6 mg/gflavonoids,g-linolenic fatty acid[56].

The present study was carried out to determine the amino acid content and the composition of the macro- and micro elements.

MATERIALS AND METHODS

The epigeal part of *Saussurea amara (L.)DC* was collected in Bayandelger soum of Tuv province. Mongolia, during the flowering period at the end of July 2003. The plant was identified by Dr. E. Ganbold, Institute of Biology and Biotechnology. Mongolian Academy Sciences and voucher specimen was deposited at the same Institute, Ulaanbaatar. Mongolia.

The quantitative amount of each amino acid was determined using the RIT 835 50 / Hitachi. Japan/ amino acid analyzer with a sodium citrate system at the BioLabof Agricultural University, China.

The analysis of the macro- and micro-elements was performed on a PF.RKIN ELMER 5000 Atomic Absorption Spectrophotometer (GERMANY). 20% HCL. Ethalon solution, Ventron standard solution with lOOOmg/ml, lamps with katode. air acetylen flame were utilized. The samples were prepared as following: first. 2.Og of dry sample were crushed into powder and heat up to 550"C. and it was kept for 4-5 hours at 550"C till it becomes ash. Finally, the sample was cooled down in exicator. dissolved in 5ml 20% HCL at temperature 80"-100"C, and some distilled water was added up to 50 ml.

RESULT

Content of free amino acids

I lie free amino acid composition of*SausXurea iinuini (*\..) DC" is shown in fab. 1. I lie total eontent of seventeen kinds of tree amino acids is 9.045 mg 100 nig. among them the 7 essential amino acids valine. methionine, leucine, iso-ieucine.threonine. phenv lalanin and lysine were identified. For prolin the highest 11.871 mg 100 mg) and lor e\ stein the lowest (0.142 mg 100 mg) concentration was determined. (fable 1)

for Ni (0.0008%). None of the toxic elements such as Cd. I'n and As were detected in the investigated plant material.

DISCUSSION

fhe total content of seventeen kinds id' free amino acids is 9.045 mg/IOOmg, The prevalent free amino acids is aspartic acid and proline in *Saussurea umara (L.) IX'*

With respect to Ca. it might be concluded that the highei content of this element could be relate

Table I Amino acid contenl i f Saussurea ; mara (1..) DC

N-	Name	time /niin/	content /mg/IOOmg,	"j*	Name	time /mill/	content /mg/1 Oiling/
1	AST	>) *M*	IT2U	10.	1 11R *	10.05	0.318
>	SI R	1 1.40	(i.3(H)	1 1.	Cil.U	12.4K	1.040
3,	(il S	17,0')	0.387	12.	ALA	IM.26	0.3N2
4.	CAS	21.10	0.142	13.	VAL*	21.70	0.447
5.	Mil ;	23.20	0.1KS	14.	I I I *	25.30	0.384
6.	I I I *	26.58	(i >X2	IS.	TYR	2X.KI	0.273
	Pill *	30.32	i)T473	10.	IAS*	34.30	0.466
	HIS	38.4]	0.103	17	ARC,	40.14	0.512
,	PRO		1.K71				

* essential amino ileitis in human body.

Content of micro- and macro-elements

The contents of Na. K. Ca, Mg. l'e. A I. Cu. /n. Mn. Ni and Pb have been defined in *Saussurea aniara (L.) DC* b\ A AS method.

fig. 1 shows that *Saussurea aniara* **main I)** contains the elements K > Ca > Mg> Na > Fe> AI (decreasing concentrations), fhe highest concentration was registrated for K (2.35%). the lowest with the hemostatic effect of Saussurea. Due to the higher content of K. Ca. Mg. Na. l'e. we can make conclusion that herbs of Saussurea amara can be used as a drug for muscle spasms, depression. ion exchange, hypertension, nausea.

It is the first time, the free amino acid content and macro, -micro elements of *Saussurea aniara (I..I DC* were determined.

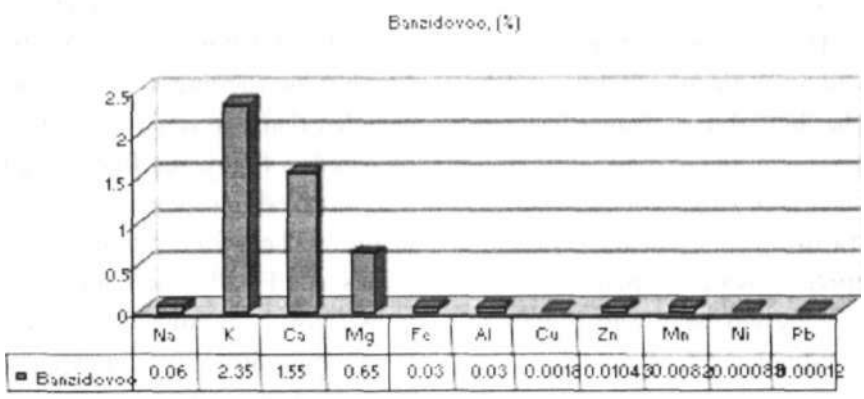

Figure 1. Macro, -micro elements of S.amara

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DENVER TEST FOR EARLY IDENTIFICATION OF THE INFANTS WITH DEVELOPMENTAL DELAY

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Abstract

The purpose of this study was to find widely available, inexpensive, and non-invasive parameters for early identification or prediction of the infants with hypoxic-ischemic encephalopathy (HIE) who will have a severe adverse outcome.

One hundred ninety two full-term or near-term newborn infants with a diagnosis of HIT. were consecutively admitted to the neonatal intensive care and pathology units and studied. Occurrence of seizures during the first 24 hour, cranial ultrasonograph} (US) findings within the first 5 days of life, and Denver developmental screening test II (DDS T II) at 6 months of age. were analyzed in relation to mortality and neurological status at 2 years of age.

Of the 192 infants, 19 were lost to follow-up. 82 of the remaining 1 73 infants had a moderate and severe adverse outcome. Among the predictors of severe adverse outcome, occurrence of seizures was found to have a poor predictive accuracy. However. DDST II at 6 months of age. yielded a very high predictive accuracy (sensitivity 100%, specificity~95%).

We conclude that DDST II at 6 months of age could be used in predicting severe neurological outcome in infants with HIE.

Key words: Denver developmental screening test II, hypoxic-ischemic encephalopathy, seizures.

INTRODUCTION

The incidence of hypoxic-ischemic encephalopathy (HIE) is six per 1000 live births in industrialized countries.[1] This syndrome accounts for up to 25% of neonatal mortality in full-term infants.[2] A significant proportion of surviving infants develops permanent neurological impairment." Early identification of those infants with adverse prognosis after HIE remains difficult/' In previous trials to predict outcomes of HIE. low predictive rates were reported when clinically based and/or widely used parameters such as Apgar scores, requirement for mechanical ventilation, metabolic acidosis, fetal heart rate abnormalities were employed.[1] " Various scoring systems based on clinical data also proved to be of limited prediction rates.'[2]""

Nevertheless, these methods are costly, and far from being widely available, especially in the developing countries, where HIE: incidence is higher, and resources for refined tools are more limited."

The purpose of this study was to find readily available, inexpensive tools to predict or identify those infants with HIE who would go on to have a severe adverse outcome defined as death or major neurological delay (MND).

MATERIALS AND METHODS

One hundred ninety two full-term or near-term appropriate for gestational age newborn infants with a diagnosis of HI El were included in this prospective study. The study took place in the neonatal intensive care and pathology units of State Maternal and Child Health Research (enter of Mongolia the period of 2001-2003. Informed consents were obtained from the parents. The following criteria were used for the diagnosis of HIE, with one or more of the following: 5 min Apgar score:-3. metabolic acidosis (serum bicarbonate < 12 mmol/L in first hour). or delayed onset of spontaneous respiration beyond 5 min; (2) mechanical ventilation at birth: (3) evi-

deuce of encephalopathy and (I) e\ idence ol multisystem involvement (i.e.encephalopathy and at least one other system)."

Exclusion criteria included congenital anomalies. inborn metabolic errors, congenital infections. birth trauma, intracranial hemorrhage.and sepsis.

Samat and Sarnat's criteria were used to classify the infants according to the severity of the HIE."'

Those who had seizures during the first 24 h of life were noted.

A version of Denver developmental screening test II (DDS1 II) was administered at 6 months of age hv certified developmentalists who were blind to the patients' perinatal histories. I he DDS I II score was considered abnormal when the child failed at least two items in four sections of the DDST II. Those subjects who survived neonatal period were prospectively followed up at a frequency of every 3 months until they reached 2 years of age. The primary outcome variable was a severe adverse outcome, which was defined as death or MND at the age of 2. Major neurological delay was defined as cerebral palsy (CP) (severe impairment of daily activities associated with hypertonia and hvperreflexia) and/or epilepsy.

The following formulas were employed to determine the predictive power of each predictor:

Sensitivity I I'd P< IN).

Specificity TN/(TNHP).

Positive predictive value (PPV)-I |V(TP if P).

Negative predictive value (NPV)~TN/ (TN+PN),

where TN-true negative. EP- false positive. TP^true positive and FN=false negative. The Mann-Whitney (/-test was used to compare the severe adverse outcome and normal outcome groups (Tables 1,2).

RESULTS

The clinical characteristics of the study population are shown in Table 1. Of the total 192 patients. 84.63. and 45 were classified as Grade I. II. and III. respectively, according to Samat and Sarnat's criteria. 19 patients were lost to follow-up.

Table I. Comparison of the severe adverse

Variable	Normal outcome // 156 Meant SI)	Severe adverse outcome // 17 Meant SI)	Significance
Gestational aye (week)	38.2:2.5	3X7:2.N	NS
Cesarean section *(n)*	57	6	
Birthvveighi.....(gm)	3103*663	2950±736	NS
Age an admission (day)	3.4*2.0	*2M*-. 1.7	NS
Sex: male female *in)*	X7 69	10/7	
Mil grade I II IIh"„)	83 46/27	0/4/13	

'lllt'.-hypoxic-ischemh'i'nceplmlopathy, \S-nol significant.

Of the remaining 173 patients. 8 died in the neonatal period from HIE related causes. Among 165 surviving patients, nine developed MND. All of the nine patients with MND had CP; three of them also had epilepsy Severity of I 111-, the results of the prediction parameters and outcomes for patient are shown in Table 2.

Table 2. Results of the study parameters and outcome

Parametres		tirade 1	Grade 2	Grade 3
Seizures	Abs	83	42	2[1])
	Pre		8	1 1
DDST II	N	73	35	-
	AN	4	13	31
	NP	6	-i	<)
Out-	N	83	48	25
come	MND	-	2	7
	died	-	-	8

*DDST II - Denver development screening lest II: abs- absent; pre- present: N- normal: AN-abnormal:

NP- not performed: MND- major neurological delay,

Seizures

A total of 19 patients had seizures during the first 24 hours of life. I I of the I 7 patients with severe adverse outcome (death and MND) had seizures (sensitivity-64%), while 8 patients who had had seizures were healthy at 2 years of age (specific ity-65%).

POST 11

The DDST II was administered to I 58 patients. 8 of the ᶜ) patients with MND had abnormal results. One patient with MND did not have the test (sensitivity 100%). Only 50 among 156 patients with normal outcome had an abnormal DDST II result (specificity 95%).

Predictive power of parameters is summarized in fable 3. All 9 cases with \1\l) failed in line motor-adaptive section, while live in personal-social and gross motor and four in language sections scored poorly

Table 3. The results of the statistical analysis for the predictors

*I)1)S| ll- Demurdevelopment screening lesl II.

Focus on parameters

As can be seen from Table 2. subject numbers for each parameter were different. The great majority of the patients with severe adverse outcome was constituted by those who died before reaching 6 months of age. Only one surviving patient with severe adverse outcome did not have DDST II as a result of non-compliance with the test appointments. Observation of the seizure was naturallv easy and made in all subjects.

DISCUSSION

Regarding the identity of the indicators that can help determine the prognosis after I 111; in full-term infants, we studied three independent, practical, non-invasive and inexpensive clinical and laboratory parameters. Like in other previous studies, we found insufficient predictive accuracy of seizures in the immediate postnatal period.[717]

This study shows that DDST II is a highly accurate predictor of later neurological outcome in infants with HIE. A good correlation between developmental status in infancy and neurological outcome later in childhood has been prev iously noted. El ten berg and Nelson examined more than 32 000 children in a prenatally defined cohort at 4 months after birth, and re-examined at the age of 7 years to determine the presence ofCP.[1]* They found that the predictive power of abnormal physical findings increased with the presence of developmental delay. furthermore. 4-month-old infants who passed all developmental milestones had a very low rate of later CP. even if they had had abnormal neurological findings.[1'] In another study, Cioni *el at.* found that the predictive power of 'quality of general movements' in the list 6 months of life correlated better than the neurological examination for later CP at 2 years of age. We preferred DDSI II as the development lest because it is a validated screening test with which many pediatricians around the world are familiar anil it has been standardized lor national children in many countries/ It shows a good concurrent validity with the Bay ley Scales of Infant Development, a well-known motor assessment test I he two alternative developmental screening tests, which could also be performed at 6 months of age. Developmental Activities Screening Inventory and Minnesota Child Developmental Inventory, are not of proven validity."'

In this study, prediction or identification of MND by DDST II at 6 months of age could be criticized by not being sufficiently early. However, it should be noted that some infants who appear to be severely affected following a difficult perinatal course may make a good recovery and have normal outcomes in long-term follow-up settings

furthermore, it has been shown that magnetic resonance imaging results were not correlated well with later MND until 8 months of age [:5] Even those who were diagnosed with CP when aged I could prove to be normal later. -*

Therefore, it appears that a period after the initial central nervous system (CNS) insult should elapse during which the injured CNS evolves to its permanent status. Only after a certain stage of such evolution, neurodcvelopmental status shows a good correlation with later neurological delay. As for the implication of the early prediction/identification, 6 months of age is not late for the establishment of an early intervention program for a better outcome. It has been suggested that the program should start as early as possible by the age of 2.[:4]

In conclusion. DDST II. a well-known, inexpensive and convenient developmental screening test could reliably be used to identify or predict the infants with history of HIE bearing poor prognosis for later permanent neurological impairment.

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DETERMINANTS OF PRE-TERM DELIVERY

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Abstract

Prematurity remains the main cause of morbidity and mortality in infants and a problem in care ol pregnant women. This study describes the soeio-demographic, reproductive, medical and obstetrical risk factors for a live pre-term deliver) 11'ID) in Mongolia. A hospital-based ease-control stud) was conducted at Maternity I lospital in 2002 yew. I he following I actors have been idem i lied as having significant independent associations with pre-term birth young (• 20 v ears) maternal age. low (fX grade) education. low (-40 kg) pregrav id weight, inadequate nutrition (irregular consumption *o\'* fruits), smoking habit ol expecting mother, histor) ol pre\ ious and habitual pre-term deliver), miscarriage, hypertension, pyelonephritis. se.\uall) transmitted infection (S 11). gestosis, multiple pregnane), premature rupture of the membranes. late pregnane) bleeding and lack of prenatal care I he preventable determinants of pre-term deliver) are: low education (AR -38%). gestosis (AR 18%). pvelonephtitis (AR I 8" <•). previous and habitual pre-term deliver) (AR 12). miscarriage (AR 10). lack of prenatal care (AR 11%) and low maternal pregrav id weight (AR 10%). Maternal, medical and obstetric complications are major risk factors for pre-term deliver). Preventive programs should focus at improv ing maternal education, health and antenatal care.

Key words: pre-term deliver), prematurity, maternal factors, attributable risk, gestational age.

INTRODUCTION

Pre-term deliver) is a significant health problem. contributing both to infant mortality and to long-term developmental and neurological disability.[1] The frequency of I'll) is 6% of total live births in Mongolia.' Neonatal mortality rate of newborns with less than 2.500 g is 76.8 per 1000 births whereas it is 44.2 for babies w ith 2.500-3.000 g of birth weight which is almost tw ice less.' I he State Research Center for Maternal and Child Health (SRCMCI I) provides a special care nationwide for pregnant women with chronic disorders and to those who are at risk of having pre-term birth. The data gathered between the period of IW5-2001 revealed that 63.7-83 5%of neonatal mortality is due to death of pre-term babies. This ev idence suggests that neonatal and infant mortality rate could be lowered hv reducing birth *o\'* pre-term babies. As research shows 75% of pre-term babies face problems of morbidity during their neonatal period when it is only 11% for full term babies."

Although prematurity has been well studied in developed countries, data from developing countries is limited. This study is among the 111 si to assess risk factors for PI 1) in Mongolia. Our aim was to describe the soeio-demographic. reproductive. medical and obstetrical risk factors of pre-term birth among live births at SRCMCI I.

MATERIALS AND METHODS

This case-control study was conducted among 802 newborns, at SRC'MCTI during 2002 year. Cases were 451 pre-term, live born new bonis, controls were 351 full-term, live born newborns. Pre-term birth was defined as gestational age <37 weeks, and full-term infants was defined as gestational age 37-41 weeks. Gestational age was estimated on the basis of the last menstrual period date and/or bv ultrasound assessments of gestational age during pregnane) and confirmed bv clinical examination of the newborn for the gestational age bv Ballard methodology."[1] The exclusion criteria were stillborn, post-term newborns and babies without mother.

I he participating infants underwent ntedkal examinations and the necessary information was recorded in **a** specifically designed format and analyzed subsequently. Social and demographic data were collected bv questionnaire and face-to-face interview using the same questionnaire for cases and controls. I lealth and pregnane) complications that could affect pre-term delivery were obtained from the maternal medical records.

Statistical analysis was carried out using statistical package SPSS 10.0.

flic dependent variable was pre-term birth (cases) 1. and full-term birth (control) :0. The independent variables were: mothers' age. parents' educational background, marital status, income. mothers height and pregravid weight, history of prior pregnancies, health and pregnancy complications. Comparisons between dependent and independent variables were performed by c' lest. Logistic regression analysis was used to estimate Odds ratio (OR) for the independent association of maternal characteristics to pre-term birth. To control possible confounding and identify interaction effects, a multivariate logistic regression model was developed including those factors significant in the univariate analysis.

Attributable risk percent (AR %) was used to estimate the proportion of low birth weight that might be prevented.

The research was carried out with verbal consenl of mothers after they were introduced to the aims, objectives and impact of the study.

RESULTS AND DISCUSSION

Socio-demographic risk factors

Overall, there are significant differences between cases and controls in mothers' social and demographic characteristics (fable 1). In general. pre-term delivered mothers compared w ith full-term delivered mothers were younger; had poorer socioeconomic status and low pregravid weight as shown in Table 1.

Teenage mothers are at 1.9 times higher risk of having pre-term infants compared to 20-34 year old mothers. Similar findings were observed by foreign researchers."" Although 9.5 % (43) of premature babies were bom to mothers 35 years old and oven the results of the statistical analyses do not confirm that pre-term birth is influenced by this factor.

The research suggests that lower educational background of mothers can be considered as a risk factor affecting pre-term delivery. Mothers with education level 8-10 grade are at 2.1 times higher risk to give birth to pre-term babies. The same conclusion was drawn bv Spanish scholars who slate that parents with low educational level increase the probability birth of pre-term delivery 2 times. The study shows that less infants with pre-term birth

Table 1. Maternal Characteristics and factors Causing Pre-term Delivery by logistic Regression

Maternal Characteristics	t ase (n=451)		Control (n=351)		(IK	95% CI
	ti	%	n	",		
Age						
• 15-1')*	41	9 1	18	5 1	1 9	1 0-3 4
• 2(1-3-1	367	81 4	305	86 9	1	
• 35 +	43	9.5	28	8.0	13	0.7-2.1
Education						
• Low or not educated*	25	5 6	18	5.1	1 8	0 9-3 6
• 8-10 grade***	332	73 6	208	59 3	2.1	1 5-2.9
• 1 ligh or vocational	44	20 8	125	35 6	1	
Income						
• iiigh	27	6 1	28	8 1	1	
• Middle	3d 7	82 7	286	83 1	1 3	o 8-2 1
• 1 im	50	11 3	30	8 7	1 7	0 8-3 4
1'regravid weight						
• >40 kg	292	834	263	92 3	1	
. <40kg***	58	16 6	22	7 7	2 4	1.4-3 9
Marital status						
• Married	381	86.0	332	95 7	1	
• Not married***	62	14.0	15	4 3	3 6	1.0-6.4

* p d.05. *** p<0.00l b\ Chi-squre test

arc horn lo parents with higher educational level as the) arc more aware of family planning issues, more concerned about their health, get earl) prenatal care and follow precisely doctors" recommendations.

The study demonstrated that mothers' weight and height before pregnane) has art impact on infants birth weight. It was revealed that 16.6 % ol cases were under 40 kg and the) were 2.4 times more likel) to have pre-term deliver) compared to mothers who weighed over40 kg (p-0.001).

Multiple logistic regression analysis proposes that the main soeio-demographic risk factor leading to PI I) is low maternal education

Reproductive risk factors

I able 2 showed the association between reproductive history and pre-term birth.

Habitual pre-term deliver) (OR 7.8). miscarriage (OR 5.4). prior pre-term deliver) (OR 3.0) were all significant Iv associated with RID (p<0.()()l). Mothers with prior experience of preterm delivery arc 3 times more at risk compared to other mothers. It was concluded by some researchers that there is 25-50% probability of low weight babies to mothers with previous pre-term birth.'

logistic regression analysis identified habitual pre-term deliver) and miscarriage to be the most important risk factors.

Table 2. Maternal Reproductive History among Study Group

Reproductive histon	Case n (%l	Control n r„i
Abortion		
No	407 (96 9)	",(IO (93 01
Yes	13 13 1 i	23(7.01
Miscarriage***		
No	374 (87 1)	:v~<2 (97.4)
Yes	56 (12 9)	9 (2.6)
Pre-term deliver) ***		
No	352 (SI 1)	317 (93 0)
Yes	82 (18.9)	2 1 (18 9)
Habitual Pre-term deli\ en ***		
No	389 ! 86 3)	VII OX (l|
Yes	62 (13 7)	7(201
Still birth*		
No	•4IX 196 5)	340 (99.1)
Yes	15 (3 51	3 (0.9)

--* rxttrlrx-"[1]"**'p^tt.tmt-by Chi-sxrure tcrq

Medical risk factors

It was confirmed that medical conditions as hypertension (OR 2). pyelonephritis (OR 1.8). trauma during pregnane) (OR- 19 5) and SI I (OR=4.8) have a significant impact on pre-term labor. When comparing pre-term deliver) cases of mothers with normal and high blood pressure we came to a similar finding as Manganaro R (1996) that those with high blood pressure are 2.6 times more at risk."

Obstetrical risk conditions

fable 3 shows that historv of late gestosis was statistical!) higher among case mothers and increased risk of having pre-term labor (p<0.001).

As Kelmanson I. A. estimated (1999). 19.6% of all low birth weight babies born in Saint-Petersburg were twins and that the relative risk of preterm deliver) during multiple gestation was 20.5 [14]. Our summary showed that 16% of pre-term babies were twins, and mothers with multiple gestation compared to those w ith single gestation are at 2.3 limes higher risk of pre-term labor.

In addition, it was defined that pregnane) complications as late pregnane) bleeding (OR 2.6). placenta abruption (OR 2.9). breach presentation (OR 2.3) and premature rupture of membranes (OR 3) have a significant impact on pre-term birth (Table 3).

Multiple variables analysis shows that the core cause of pre-term delivery is premature rupture of membranes.

Prenatal care is essential in assessing mothers' health status as well as earl) diagnosis, treatment and prevention of possible complications during pregnancy. We should pay due attention to the fact that 15.9 of mothers with prematurely born infants (5.2% in control group) have not sought prenatal care during their pregnancy. Mothers who did not receive prenatal care are at a higher risk of preterm deliver) by 3.4 times compared lo moms who sought earlv prenatal care (p<().00l).

Smoking

Research conducted in Great Britain. Canada and the USA revealed that 10-14% of pre-term delivery was due to mothers smoking habit while our estimates for the same factors stood at 4% for

Table3. i (bstetrical Complications During Currenl Pregnane) among Study Group

Obstetrical Complications	Case (n 1511 n	Control in 351) n	OR (95% CI
Late gestosis***			
No	286 (63.4)	272 (77.5)	1
Yes	165 (36.6)	79 (22.5)	2.0(1,1-2.7)
Polyhydramnios			
No	424 (94.0)	?39 (96.6)	1
Yes	27 (6.0)	12(3.4)	1.7(0.8-3.6)
Oligohydramnios			
No	441 (97.8)	340 (97.1)	1
Yes	10(2.9)	10(2.2)	0.7(0.3-1.8)
Premature rupture o membranes***			
No	312 169 2)	306 (87.2)	1
Yes	139	45(12.8)	3.0(2.0-1.3)

p<0.05. ** p<0.()l. *** p<0.()0l b) Chi square test

pre-term deliveries (1.7% in control) and smoking mothers have higher risk of giving a pre-term birth 2.4 times than non smoking mothers (p<0.05).

*Population **Attributable** Risk*

Population Attributive risk per cent (PAR%) was used to estimate the proportion of PTD that might be prevented. The preventable determinants of preterm delivery were low maternal education (AR=38%). late gestosis (AR- 1 8%). pyelonephritis (AR^18%). low maternal pregravid weight (AR=I0%), and inadequate antenatal care (AR=U%), miscarriage (AR=10%). and habitual preterm deliver} (AR= 12%). Other risks for PTD include maternal hypertension, smoking, being single mothers, teenage pregnancy (fable 4).

Table 4. Population Attributable Risks for Preterm Birth among Study Group

Condition	Prevalence among Population il'i.S Dj%j	Population Attributable Risk (PAR %)
reenage	6.0	5.0
low (• X grade) I ducation	"2 0	38 0
Single Mother	I 0	6 0
Low(<40kg) Pregravid Weight	8 0	10.0
Late Gestosis	23.0	IX o
No Prenatal Care	5.0	II o
Miscarriage	3 ii	ID II
l're\ ions I're-term Deliver)	7 0	120
Habitual Pre-term Delivers	2 0	12 0
Still Birth	I 0	3.0
Pyelonephritis	27 0	1X0
I lypertension	711	7 0
short Interpregnanc) Interval	9.0	6(1
Maternal Smoking	: II	2 o

At the end. there are major factors affecting pre-term birth are habitual pre-term birth, miscarriage. late gestosis, premature rupture ol the membranes. low education level, low pregravid weight. pyelonephritis and poor prenatal care - factors that can be altered. Solutions lie in promoting proven strategies to impact each one of these potentially treatable factors.

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PARTIAL SECOND-TOE PULP FREE FLAP FOR FINGER-TIP RECONSTRUCTION

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Abstract

Surgical, reconstruction of a finger-pulp defect is a difficult procedure .Identical donor tissue is not easily available and the donor site morbidity can be signilleant. We propose use of a second-toe partial pulp flap for the replacement of defects of the fingertip, this uses identical donor tissue, w ith low donor site morbidity. Forty-six digits in 44 cases were treated during a 24 month period (10.02.2003- 01.08.2005). The donor site was the pulp of the medial aspect of the second toe. The pedicles were composed of the medial plantar digital artery, the medial plantar digital nerve, and the superficial plantar vein of the second toe. The flaps were successfully transferred in 91.3% of the eases. The static two-point discrimination (S2PD) was 6.8 mm as measured in 23 cases, which were available for follow-up at 9 months or more. Primary closure able to be achieved was of the donor site in give.

The Second toe pulp partial flap achieved excellent sensory recovery, color and texture matching. The vascular anatomy was consistent and the vessels were easily dissected.

Primary closure of donor site was usually possible, with little morbidity. The flap could be used only up to a defect site of the finger-pulp. Patients w ith known vascular disease or aged than 60 years were not offered this flap as are for it the possibility of donor site morbidity was too high. The vessels were small with a diameter of I mm. And significant micro vascular expertise is to perform this procedure. In conclusion, we feel that the second - toe partial pulp flap is a useful method to reconstruct the defect of fingertip pulp defects in appropriate patients.

Key words: finger-tip, second -toe free flap

INTRODUCTION

Among all cases of injuries the trauma of upper extremities make 30-40 percent, furthermore among the upper extremities injuries hand injury composes 20percent and again among all injuries of the hand in 33.2 percent the patients become disabled. The vast majority of such patients suffer the injury at the age of 20-40.'

The statistics of the reception department and of the outpatient clinic of the Clinical I lospital of Trauma and Rehabilitation reveal that in average 1200 people arrive due to cut-off of a finger or a part of the hand every year. Among these cases approximately 450 patients come with injury of soft tissue of the finger end.

Surgical intervention to restore the finger end soft tissue defect is an actual and quite complicated issue for the hand surgeons. The earlier traditional methods of restoring the finger making it shorter or transplantation of other soft tissue grafts were very popular but with minimum success. Recently compensation of the finger end by the entire second finger end of the foot is becoming widely used praxis

This hot topic of modern microsurgery has attracted our attention and interest so that we have decided to properly study this method and introduce in our praxis.

In 2003 we began to treat fingertip injuries with second-toe partial pulp free flaps to achieve these goals.

MATERIALS AND METHODS

We have performed this operation for 46 digits in 44 patients from February, 2003 through August 2005. Our indications are as follows.

Patients with a pulp defect on fingertip of less

than I cm x 2cm

Patients with a painful fingertip because of for atrophy after replantation and patients with bone exposure in an amputated fingertip.

The patients" age ranged from 14 to 46 years with an average of 36 years. All patients exerpt 2 were operated on under brachial plexus block \ spinal block. A pneumatic tourniquet was used to control bleeding, the incision was made over the volar aspect of the finger in a zigzag fashion. Using sharp dissection, the digital artery, nerve and a superficial vein were identified. The pulp of the contralateral or ipsilateral second toe was marked, w ith dart extending toward the medial aspect of the second toe also in a zigzag fashion. Again using sharp dissection again, we identified the medial plantar digital artery, medial plantar digital nerve and a plantar vein. With these identified the neurovascular Hap was raised. I he average of size of the neurovascular flap was 2x1.5 cm. The plantar vein required meticulous dissection because of it is superficial location the distal portion of flap was dissected easily until the periosteum and tendon sheath were identified. The distal half of the skin of the neurovascular flap is sutured in place first, for stabilization. Then the donor and recipient arteryed and veins were anastomosed with interrupted 10-0 nv ton. The digital nerves were anastomosed as distally as possible for rapid sensory recovery with interrupted 10-0 or 9-0 nylon sutures.

In some cases, distal portion of the, flap was deepithelized and infolded for additional padding.

The resultant donor defect was sutured primarily in all patients.

The function of the transferred pulp was assessed. notingthe tasks for which the patients used it, subject satisfaction for appearance, we measured static 2-point discrimination in the e 23 eases that were followed up for 9 months or more.

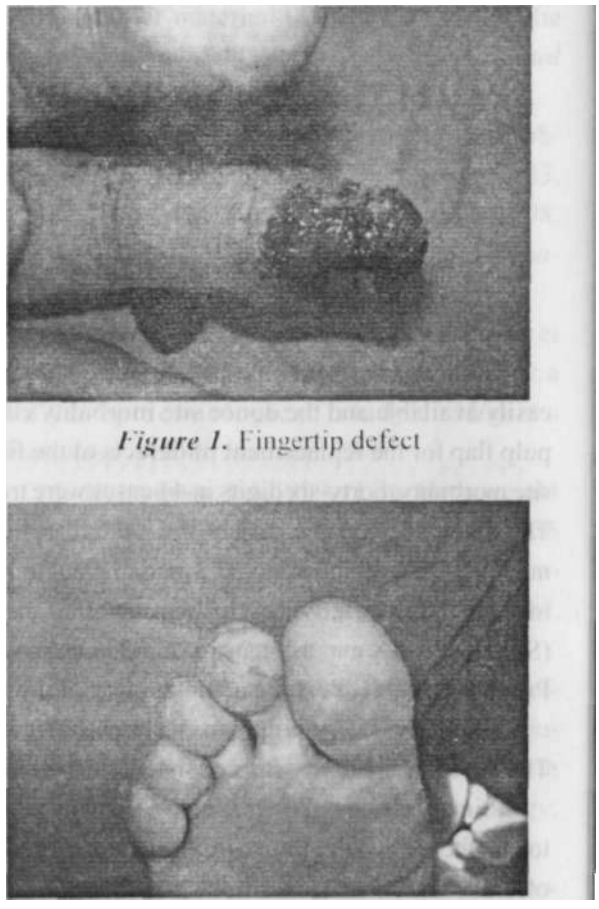

Figure 1. Fingertip defect

Figure 2. Donor site

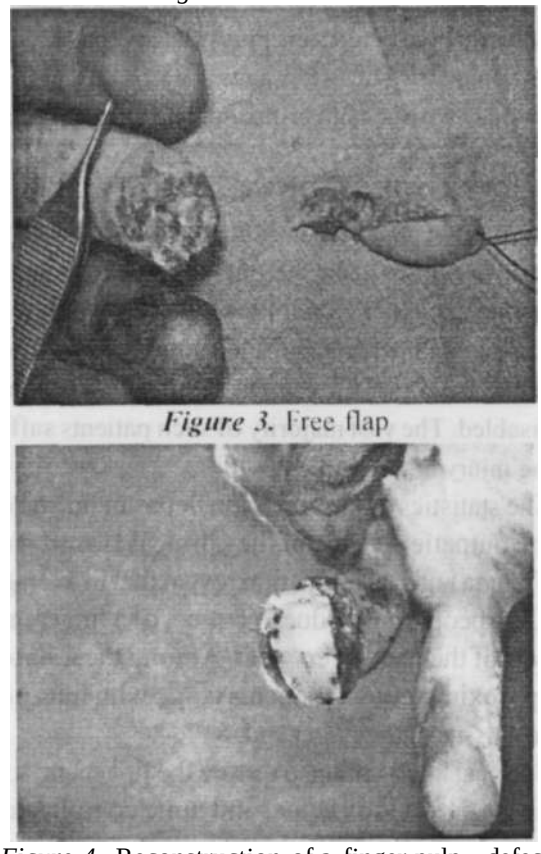

Figure 3. Free flap

Figure 4. Reconstruction of a finger-pulp defect

Postoperative result 3 months later

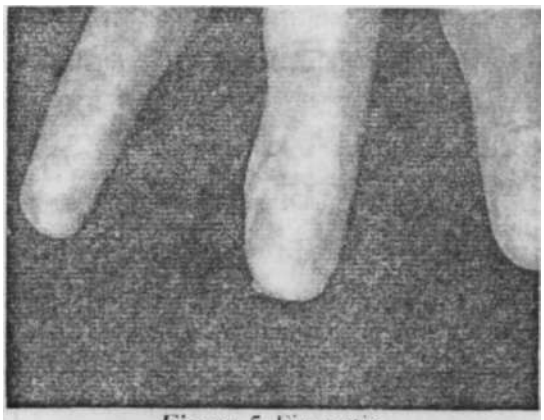

Figure 5. Fingertip

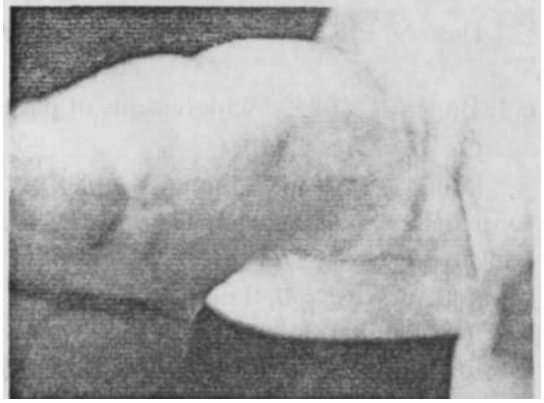

Figure 6. Donor site

RESULTS

Forty two of the 46 (laps were transferred successfully (survival rate=91.3%) sex flaps were revised with vein grafts due to arterial spasms, to salvage the flap. (Table 1)

Table I. Result of cases

Age	0-20	20-40	40-60	60-	total
Cases account	2	31	10	3	46
failed flap	0	1	2	1	4
Result (%)	10%	%.7%	SO",,	66.6%	91.3%

The average operation time for this procedure was just over 120 minutes. Active mobilization of the recipient, hand was performed after the one week. We have performed secondary operations to the recipient site including three split-thickness skin grafts, two secondary closures and 6 esthetic Hap revisions no secondary procedures were required at the donor site.

All patients in the 23 cases we followed up were satisfied with their results from both a functional and cosmetic point of view. No patient complained of dysesthesia, or pain as a factor preventing normal activities. Some patients initially complained of cold intolerance but their had resolved in all cases bv ° months.

Except for patients with injuries to the tendon or joints, all patients used the fingers after flap transfer and were able to perform small precision-sensory gripping. ()hjectlv. average S2IM) was 6.8mm in all follow-up 23 patients, at 6.2mm in younger patients than 40 years and at 8.2mm in older patients than 40 years (fable 2).The sensibility was better in the flap than in the similar tissue in the non-operated second toe.

for the donor site, there are no complaints, of gait disturbance, pain with walking or standing, or the need to change shoes. The scar of donor sites was stable and invisible to the dorsal v lew.

Table 2. Range of static two point discrimination

Age	0-40	40<	25 \meant\
Cases	17	6	23 \total\
Range S2PI)	6.2mm	8.5mm	6.8mm \meant\

DISCUSSION

Our own investigations of a patient contingent numbering 44 people of 4-64 age range and with average age of 31.2 confirms the conclusion that these patients usually are of very active work ability age."-[1]

The result of surgical intervention undertaking on 33 patients of the age up to 40 years showed restoring of palpation sensitivity up to 98.3 percent of physiologic capacity. This result coincides with the conclusion that the younger the patient the better is the restoring of palpation and function.[4 5]

In comparison with the traditional methods of restoring the finger making it shorter or amputation of other soft tissue grafts the modern technique *o\'* replacing the injured linger tip b\ second toe pulp free llap in cases of soft tissue loss, of finger distal phalanx open injury or in case of painful scarring of the finger tip delivering unmatchable better results. This the latter method leads to quick restoration of palpation sensitivit) and of linger function.

Pulp skin is thick, glabrous and rich in sweat glands. less elastic libers and sebaceous gland Pulp skin v\as numerous nerve ending and its characterized by line crests (papillary ridge) alternating with fine grooves, features which are found onl\ on the palms of the linger defect have been preferred to reconstruct with same pulp tissue. Main difficult reconstructive procedures have been reported including local flap, island llap and free tissue transfer. Our method, the second-toe partial pulp free Haps matches well the color and texture of Fingertip.

Therefore the transplanted part heals much quicker and with minimum scars and since the receiver and the donor is anatomical!) one person cosmetic esthetics are also very successful. The second-toe partial pulp free llap is proposed for the successful restoration of a well padded fingertip, excellent sensor) return, with little morbidity of donor site. Early ambulation and early reuse of the hand are both possible. This is accomplished in a one stage operation. Our method has shown excellent restoration of the hand.

Thus this modern surgical intervention technique is the most fitting method in 95 percent of vases of soft tissue loss, ol linger distal- phalanx open injur) or in case of painful scarring of the fingertip."'

The other advantage of our llap is that it was possible to include nail bed. distal phalanx and interphalangeal joint of second toe in some reconstruction.'"

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CHARACTERISTIC INDICATORS OF PREVALENCE IN POPULATION OF ULAANBAATAR CITY OF EPILEPSY BYAGEANDSEX

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Abstract

By the performed survey of prevalence of jpilepsy among the population in which there were involved all persons above 5 sears old in 3 administrative districts oil laanbaatar city it was revealed total 708 patients w ith the seizure of epilepsy (male-375. female-333). And the characteristic index of periodical prevalence ofepilepsj among the population was been defined by di\ iding patients into I 3 age groups and its population se\ difference by the number of patients per I Odd people.

I he occurring prevalence of the epileptic patient for total population of above 3 districts is found to be equal to index of 2.50 (malc-2.73. female-2.28) per 1000 people.

Key words: epilepsy

INTRODUCTION

Epilepsy is the pathology, which become a real challenge of researchers and practitioners from prehistoric times up to now And remains challenging as before due to besides having the wide prevalence among population this pathology has significantly hard consequences and its etiology diagnosis. treatment, prevention methods are still not thoroughly investigated and resolved. ;;"

Researchers have pointed out significant difference ol prevalence of this pathology among populations of various countries and last years its prevalence increased in some countries (0.8-66 occurrences per 1000 people).

By his research performed among 0-1 8 age-group of population (hoidog (1978) established occurrence index of 1.48 per 1000 persons prevalence of epilepsy in Uvs province and 1.87 per 1000 persons in Nairamdal district of UB city in 1978.:

MATERIALS AND METHODS

In our research there were involved total 283384 persons *o\' }* administrative districts (Bayangol. Songinkhairkhan and Khan-l til districts) of 11 laanbaatar city population.

In the research there were applied combined methods of questioning and medical examination. personal examinations for diagnosing of patients abiding to the principle established from international conference ol epilepsy experts. I or revealing of epilepsy causes among the population there were used method of performing medical examination v isitmg from family to family and thus i:i the research it was involved total 50643 families.

And from the population of the abovementioned there was been revealed total 708 patients with epilepsy (male-375. female-333) keeping questionary form of medical examination with (>4 questions. In order to establish the index ol epilepsy pathology occurrence in the population was been defined by di\ idingthc involved indiv iduals into 13 age groups and the sex difference defined by causes per 1000 persons. In the processing of research results it was been applied "\" coefficient of Fisher-Student found out by "P" probability.

RESULTS AM) DISCUSSION

If we define the total 708 epilepsy patients (male-375. female-333) revealed among the involved population by each administrative districts then we have follow ing results: 334 patients(male-197. female-1 39) in Songinokhairkhan district. 234 patients (male-1 12. female-122) in Bayangol district. 138 patients (male-66, female-72) in Khan-Uul district.

I he index oi prevalence of epilepsy among the population of above mentioned districts of the capital eit\ is 2.50 per 1000 persons (male-2.73, female-2.28)1 [able 1).

I TO m the results of detailed research there are revealed fluctuating indexes from 1.00 (5-9 age group) to 3.54 (20-24 age group) for male population and from 1.10 (5-9 age group) to 3.49 (20-24 age group) for female population.

I he highest rate of prevalence ofepilepsv are observed among age groups of males of 20-24 age group (3.54) and 45-49 age group (3.40). and for age groups of females *oi'* 20-24 age group (3.49) and 40-44 age group (3.29).

And patients of 5-9 ages. 10-14 ages. 60-74 ages and above "5 vears old age groups have similar prevalence rate ofepilepsv.

I he age groups of patients, which have least rate ofepilepsv prevalence, are 5-9 ages. 10-14 ages. 60-74 ages and above 75 vears olds with respective indications fluctuating within 1.00-1.36.

Although the prevalence ofepilepsv rale among all age groups bv sex is similar prevalence rate among male individuals is relatively high than of females (male 2.73. female 2.28).

Though in the prevalence ofepilepsv seizure respective to sex there does not observed any, significant differences for patients of 10-14 ages. 20-24 ages. 45-49 years olds. 50-54 vears olds, and 55-59 years olds there revealed tendency of males being affected more than females (3.54 1.37).

from abovemeniioiied fact we ean sav that certain indications of age and sex are related to appearance of epilepsies among the population. And due significance have 20-59 vears old ages for males and 20-54 vears old ages lor females.

And regarding to this fact it could be assumed from same livelihood and physiological peculiarities of indiv iduals as vulnerabilities of males to accidents and cardio-vascular diseases and females to pregnancies and delivering of birth, menopause and etc. physiological changes.

In the research performed bv (hoidog (1978) the prev alence ofepilepsv seizure for children ami youth of 5-1 8 age group it was established frequenciesofwithin 1.48-1.87 per 1000 persons.

If compare these indicators with the results of research performed bv foreign\n researchers regarding to the prev alence of epileptic seizure among the population they w ill significant!) differ from each other.

By the research performed bv the foreign researchers there were established prevalence of epilepsy among the population ranging within 0.8 66.0 indicators per 1000 persons. "

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Table I Prevalence of epilepsy, seizure per 1000 persons in the population regarding to age and sex indicators:

No.	Aye groups	Male		Female		I'otal	
		Number	Per 1000	Number	Per 1000	Number	Per 1000
1	5-7	21	2.12	19	i 1.92	40	2.0
2	8-14	43	1.49	39	1.33	82	1,41
.1	15-18	26	2.33	25	2.14	51	2.23
t	19-24	77	4.31	69	3,33	146	3.79
5	25-29	48	5.66	47	3.74	95	, 3.70
6	30-34	49	3.71	44	5.19	93	3,44
7	35-3')	11	5.82	36	3.26	77	3,54
8	40-44	29	3,72	24	, 2.65	53	3,15
9	45-49	17	2,93	10	1.41 "|	27	i2.10
10	50-54	12	2.2')	9	1,57	21	1,92
1 1	55-59	7	1,15	5	0.87	12	0,94
12	60-74	5	0.86	4	0,64	9	0.75
13	Above 75	-	-	2	0.87	2	(1.18
14	lotal	375	5.73	333	2.28	7(18	2,50

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THE ASSESSMENT OFCLINICAL MANIFESTATIONS OF GASTROESOPHAGEAL REFLUX DISEASE (GERD) AMONG MONGOLIANS

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Abstract

The new millenium has distinct changes in the pattern of gastrointestinal disease in the Asian Pacific region. In Mongolia, increasing interest of gastroesophageal reflux disease related to the availability of new methods ol investigation and modalities of treatment. Since 1999 year, 2-1-h pi I monitoring has gained w idespread clinical use in the identification of gastroesophageal rellux disease in our country

Our aim was to assess clinical manifestations and classify of hospital-based gastroesophageal rellux disease among Mongolians In this prospective!) study, we collected 172 outpatients with gastroesophageal rellux disease. Diagnosis was considered by combination of three criteria - clinical, endoscopic and pH-metric. Gastroesophageal rellux disease was graded according to the severity of esophagitis using Los Angeles classification. All individual parameters of esophageal pH monitoring, such as frequency of all or only long reflux episodes, and an overall summary score of pi I nietry.

The morphological and physiological findings of four groups of gastroesophageal reflux disease patients in Mongolia are presenting the various clinical forms of gastroesophageal rellux disease, which differentiated by activity of reflux esophagitis. occurrence of Barrett's esophagus, presence of *11.prion* infection, and severity of acid rellux episodes. We recorded that peculiarity of hospital based gastroesophageal rellux disease in Mongolia with association of gastroduodenal pathology.

Keywords: gastro esophageal rellux disease, rellux esophagitis. Barrett's esophagus

INTRODUCTION

21[a] century is considered as a century of Gastro esophageal Reflux Disease.[1] frequent symptoms of gastro esophageal reflux affect I 0 - 30 % of the adult population in US. Western countries, yet less than one third of reflux patients ever develop reflux esophagitis.[:] Now a new conceptual model is adopted that considers GERD as three unique groups of patients: non-erosive reflux disease (NERD), erosive esophagitis (RE) and Barrett's esophagus (BE).[3] * This subset with Nl-RD comprises up to 65-75% of the GERD population. A symposium held at the World Congress of Gastroenterology in 1994 has proposed the use of mucosal breaks for the diagnosis of erosive esophagitis and classification. The Los Angeles classification has gained wide acceptance among doctors of the world.'

GERD appears to occur less frequently and milder of endoscopic severity in Asia than in US and Europe. In last few years has the evidences to suggest that GERD is increasing in some Asian countries such as Taiwan, Japan. Malaysia and Singapore. This could be due to changing socioeconomic conditions, lifestyle changes, decreasing prevalence of *11.pylori* etc in the region."

There are no particular study of GERD in our country, which is becamingone of the common disorders in the medical practice in Mongolia. GERD documented in 3.8 percent of the patients underwent

upper gastrointestinal endoscopy during 1996-1999 and the subject number was increased up to 16.5 percent during 2000-2002 at the Shastin and Central Clinical I lospital. The previous studies show that male patients suffered from reflux disease 2 times more than female patients and generally indicate increasing prevalence of GERD in Mongolia. The last decade has been significant progress in our ability to assess and treat GERD. In Mongolia since 1 999 \ ear 24-hour pi I monitoi ing has gained widespread clinical use in the identification of GERD." Prolonged esophageal pi I monitoring is an established and well-standarised lest to measure and quantify esophageal acid exposure, indirectly to determine the esophageal motor dysfunction."

The aim of the present study was to assess clinical manifestations of GERD, depending morphophysiological appearance of esophagus ami stomach among Mongolians. Consequently we would like to explore the difference of GERD in Mongolia. In this prospective study we have investigated 1 72 patients with GERD. The diagnosis of all patients was confirmed b\ (if. RD questionnaire. 24-h esophageal pH-metry. and upper gastroduodeanal endoscopy with boipsy and // *priori* test.

METHODS

Patients The stud) consisted of patients (59 men. and 79 women, mean age .39.7) who were undergoing upper gastrointestinal endoscopy for symptoms of GERD in the outpatient endoscopy clinic at the State Central Hospital of Mongolia from 2002 untel 2004. A standardised GERD questionnaire was used to obtain a In story from each patients.[1]" Patients were considered symptomatic for GERD if their chief complaints comprised typical reflux symptoms, such as heartburn, regurgitation, acidic taste, and the temporal relationship of their to body position or food intake. Patients being worked up for GERD included those with chest pain, epigastric pain, sore throat, hoarseness, and pulmonary symptoms. Subjects with a diagnosis of infectious, caustic, or radiation or pill-induced esophagitis were excluded in the present study. All patients underwent an 24-h esophageal pH monitoring and an esophagogastroduodenoscop) (EGD). GERD patients depending on following endoscopic appearance were divided into lour groups: group 1 - 41 patients with NERD, group 2a 37 patients with only RE, group 2b 63 patients of RE with gastritis, and group 2c .32 patients of RE with peptic ulcer (figure 1 and Table 1).

pH-metry Ambulator) 24-h pi I monitoring was used to determine the presence of acid exposure in the esophagus. Two days prior to the pi I metn was stopped antisecretory therapy. After calibration. a transnasal pi I electrode (Gastroscan-24. Istok. Russia) was passed and positioned I" electrode - in the body of stomach. 2^{nl}electrode - in the cardia of the stomach. 3rd electrode - 5 cm above the superior border of the lower esophageal sphincter. The degree of reflux was determined by continious sampling and storage at 20-sec intervals pll gram. After the lest, the recorder was connected to a computer for future evaluation. A reflux episode was considered relevant only if a drop of intraesophageal pU to <4.0, the total acid contact was measured separately also for the upright and supine monitoring periods. The frequenc) of all reflux episodes and the total long(>5min) reflux episodes were determined for the total 24-h period. A summary score as described by each patient.

Table I. Characteristics of GERD patients

Criteria	Group 1 n - 41	Group 2 n-37	Group 3 n - 63	Group 4 n-31
Number of patients	41	37	63	31
Male (n)	21	23	29	20
Age (yrs)	43.7	42.4	39.7	32.1
Bod\ weight index >27 in)	10	14	11	3
Duration of reflux (yrs)	2.4	4	5.7	2.5
Tobacco use (n)	15	18	13	12
Alhocol use (n)	14	14	16	8

Endoscopy and biopsy After an overnight fast, a routine EGD was performed with Olympus endoscope (ill XO 40 using topical anesthesia. We were used to record abnormalities of the upper gastrointestinal tract terms of""Terminology. Definition and Diagnostic Criteria" ." RE was classified Los Angeles Classification System. Biopsy was indicated in cases where the endoscopic appearances suggest columnar metaplasia of the esophagus. We was used ureasa test ("Pantasol" England. "Pronto Drj - Test" USA. "Mon-HP" Mongolia) for detection *11.pylori* infection.

Statistical analysis (jumped data expressed as the mean i standart error, statistical significance was determined h\ Students t lest.

RESULTS

The total study consisted of 1 72 subjects with reflux symptoms considered by 24-h esophageal pi I mclry. The median value of pi I measurement parameters in each clinical group of GERD patients were demonstrated the pathologic gastroesophageal reflux (Table 2).

The acid reflux among NERD patients characterized by total time of pi I decreasing below 4.0 points with 13.1 £2.6 percentage of total daily time and the frequency of reflux episodies with 3.00+4.29. also the number of longest acid episodes was 6.20 ^ 0.83 with 55.81+ I 7,5 min of duration of longest acid episodes

Total reflux time in patients with RE was 20.99. 23.91 and 26.9 percentage of total daily time consequently in group 2a. group 2b and group 2c. which were 1.6 2 times more than in patients of group 1 (p«).()l, p<0.01, p<0.01). I he frequency of reflux episodes during 24h was 64.52+12.88 in patients of group 2a and 71.37+ I 3.8 in patients of group 2b and 95.1 1 t 10.29 in patients of group 2c. Daily reflux episodes were determined 2 times more for the group 2a comparativ ely to group 1 (p<0.0() 1). but it is more similar to group 2b (p>0.01).

The frequency of longest acid episodes in group 2a was encountered 9.94*2.10. in group 2b 11.06+2.09. in group 2c 8.37+1.42. Duration ol longest acid episodes among all groups of RE was longer than in group l.but this was longest among patients of group 2b (12.25 i 17.04. p<0.001) and group2c(117.87±15.60,p<0.001).

The severity of acid reflux occurs for the patients of group 2c more than other GERD groups. which 2-3 times more by DeMeester summary score (109.32' 16.7, p<().()01). DeMeester summary score was 45.19 among the patients of group l.and 76.12 among the group 2b. and 83.78 among the group 2b.

Among the total 1 72 subjects with pathologic gastroesophageal reflux by 24-h esophageal pi I mctry were determined 41 (23.8%) patients, who

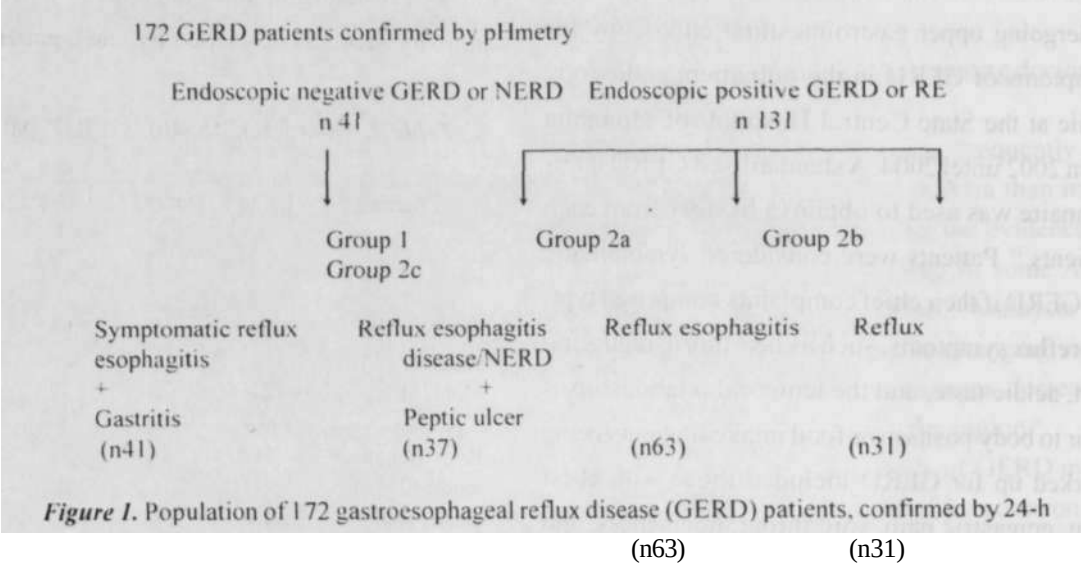

Figure 1. Population of 172 gastroesophageal reflux disease (GERD) patients, confirmed by 24-h

(n63) (n31)

Figure I. Population of I 72 gastroesophageal reflux disease (GERD) patients, confirmed by 24-h intraesophageal pH metry. who referred for endoscopy. GERD patients depending on following endoscopic appearances were divided into four groups: group 1-41 patients of NERD, group 2a - 37 patients with only esophagitis (RE), group 2b - 63 patients of RE with gastritis, and group 2c - 32 patients RE with peptic ulcer.

had no esophageal imicosaj abnormalil es initio scopicall) and the) called bv patients with \I.KI). Of the remaining 131(1 76.1%) patients with various grades of RE, 56 (32.5%) harbored grade A. 35 (20.3%) - grade B. : I (13.9%) - grade C. 16 (9.4%) - grade I).

I he clinical features of GERD patients in each of the four groups is presented in fable 3. I he severity of RE was showed in group 2c. which demonstrated RE with A and B grade 25.8% each. but Ki: with G grade was 29.0",, and 1) grade - 19.3%. Detection of *H.pylori* infection was in 25.0% - 36.0% among patients of group I and 2a. In group 2b *H.pylun* was found in 72.0%. and in case of group 2c - in 90.0%. I he pathomorphology investigation was confirmed active pangastritis in 63.9% of patients, superficial gastritis in 29.8%. antral erosive gastritis in 37.1% and atrophic gas-Iritis with intestinal metaplasia in 10.3% patients among group 2b and group 2c. Also morphological analysis confirmed BE in 29 (16.8%) GERD patients. and 6 cases of them had dysplasia. I he frequency of BE and dysplasia were presented in the clinical group of GERD patients as following: in group 1 BE 7.3 % and no dysplasia, group 2a - 21.6% and 2 eases of dysplasia, group 2b - I 5.8%

KI	\ grade (%)		51 3*	46 0«	25 8
	li grade i"..)		: i l	28 *i*	25 X
	(grade(°oi	-	13 5	15 8	|U l«
	1) grade <""i	-	in 8	*'i* 5	2'MI-
Barrett's esophagus i"«i		-7 :	21 6*	,,,-	19.3*
l)\spl;isia i n i			)	3	1
H.priori infection i"		: i :•	15 1	71 4*	1(1(1 *W*

*!'• O.ddl statistical diuvrenec \ll data was shown as a mean • SI

DISCUSSION

GERD has been traditional!) approached as a 'spectrum' of disease/ Appoxunatelv 70% ol GERD patients have non-erosive reflux disease (NERD) or endoscopy negative reflux disease. ; " " The far end of the spectrum is occupied bv patients with RI or with GERD complications, such as esophageal ulceration, stricrute. BE. and adenocarcinoma of the esophagus.[1'] In addition RE accompanies m 56%-78% of chronic gastritis and

Table 2. Presentation of DeMeester and Johnson's criteria bv 24-h esophageal pi I parameters among clinical variables ofGERD patients

Longest acid episodes	- 3.5	(1.2.0.83	9.94.2.10	8.06.2.09	1 1.37. 1.42*
Duration *of* longest reflux	9.2	55.8P 17.5	67.58:16.69	1 12.25: 17.0 4*	1 17.S7: 15.60 *
Summary score	• 14.7 2	45.19 *t* 11.3	76.12 ± 23.5*	83.78 i 29.5*	I09J2 *t* Ui.7*

*P<0.00l statistical ditYerence. All data was shown as a mean - SI

peptic ulcer. In this case the management of Rl is considered as the secondary concern.[1] [S '"

V\e were determined some clinical Forms among GERD patients. According to our study. NERD occurs in 23.8% (41 pts) of patients, while Rl- presents in 76.1% (131 pts). I he data shows that among hospital-based GERD patients were predominated endoscopic positive reflux, on the other hand NERD patients visit to hospital rarely.

Clinical manifestation aj group I NERD patients: The duration and the severit) of reflux syndrome of NI-.RD patients no differs from rc-llux complains of RE patients (p (1.01). A large of paper concluded the no difference in acid exposure and long-term sj mptoms surveillance between NERD and RE.'[1]

Those patients from our studj demonstrate lack of am esophageal and gastric mucosal injury, consequently found lower prevalence of /*1.pylori* infection. By the last ten years the *11.pylori* infection had high occurrence in Mongolia." [;:J luul et al (2002) was defined that the prevalence of *II.pylon* infection among health) adolcents is high like as 63.5%, and *H.pylori* infection acquisition occurs primarily during childhood in Mongolia.'" We suggested that 24.3% of occurrence of *H.pylori* infection in NERD patients compare with the frequency of *H.pylori* infection in Mongolian populations have no clinical important.

But our results of 24-h pi I metry showed that all of DeMeester and Johnson's criteria of gastroesophageal acid reflux was higher among NERD group than criteria of healthy people. This argument is supporting that the direct diagnosis of ambulator) 24-h esophageal pi I monitoring varies according to the different GERD groups.

The association between columnar lined esophagus and GERD was first shown in the landmareker paper of Bremner in 1970. In our study defined 7.3% case of BE without dysplasia in group I. that serves of long lasting influences of acid reflux into esophageal mucosa.

Among endoscopic positive reflux patients we had detected only 37 (or 28.2% of total patients) patients had independent RE, but 63 (48.0%) patients had chronic gastritis, and 31 (23.6%) patients had combined gastroduodenal peptic ulcer. We think differences of clinical manifestations of those RE patients were depended on associated gastroduodenal pathology.

Clinical manifestation of group 2a Independent RE patients: findings from our study demonstrate that RE patients have a significantly greater esophageal exposure to acid than do NERD patients. Consequently, the frequency of BE and dysplasia were presented more often among RE patients. So group 2a presented 21.6% of BE, and 2 cases of dysplasia than differs from NERD group (p«).01).

Our research illustrates that *H.pylori* infection in patients with independent RE occurs in 36%. that no significant from prevalence of *H.pylori* infection among NERD patients (p>0.01). Our results of incident *o\' H.pylori* infection among NERD or RE patients similar to studies from Japan.[:x] Germany[2]" and China[10] that shown a significantly lower incidence of *H.pylori* infection in patients with RE than in matched controls.

Clinical manifestation of group 2h RE patients with chronic gastritis: Most patients of this group exhibit a higher rate of reflux episodes than do NERD (p<().01) and do independent RE patients (p<0.01). Our recent study was shown that the important for clinical features of RE patients with accompanied gastroduodenal pathology was the higher occurrence of *H.pylori.* In 72% of Rl patients with chronic gastritis was detected *H.pylori* infection. Differences in esophageal acid exposure and acid secretion, finally pattern of gastroduodenal lesions may account for differences in the clinical outcome *of H.pylori* infection. Also group 2b presented higher frequences of BE with 15.8% of cases and 3 of them had a dysplasia.

Clinical manifestation of group 2c RE patients with peptic ulcer: We strongly refferred that 24-h esophageal pi I monitoring is useful as diagnostic approach for establishing the severity of GERD. High degree of esophageal acid exposure related to patients of this group. Direct method to identify of daily frequency and time-period of intraesophageal acidity in the patients with GERD by DeMeester and Johnson's criteria is determined the desynchronosis of daily intraesophageal pi I levels. We considered that 24-h pH metry became one

of I'liionophysioloincnl method. ils miiltilaicnl parumtcrcs were reflected in diagnosis of (il Rl).

I he occurrence of *fl.pylori* among the GERD patients closely related to peptic ulcer Jiesease. thai reached up to 90% in patients from goup 2c.

Although information about *11 nylon* infection is e'nvolved. studies of its role to the protection against GERD. or its complications is not completely understood." It has been reported that patients are at risk of developing Rl alter successful *H.pylon* eradication therapy. and that the presence ol the bacterium might be protective against the development *o\'* Rl ()n the other hand. Harvey el al. explored that *II.pylori* infection was associated w ith a slightly increased prevalence of heartburn but not reflux, and treatment to eradicate *II pylon* had *no* bene lit in patients with heartburn or gastroesophageal reflux[11] reviewed the effects ol *H,pylori* and its eradication on (d Rl) in patients with duodenal ulcers or Rl I hey concluded that the //pv Ion infection eradication in duodenal ulcer disease provokes Rl or worsens heartburn. I here are insufficient data to draw firm conclusions about impact of in patients w ith RE at present and need more high quality clinical studies in future.

Nowdaysthe prevalence of BE among patients (>I.KI) is unclear. The frequency of BE varies in different reports depending on the population being studied and the sensetiv itv of the technique used to establish the diagnosis. A lower prevalence is generally observed at gastrointestinal endoscopy : 2% pf6J68. 4 % of *2M).* 0.6% of 5.300 patients were found to have columnar epithelium in the esophagus/ Bl. is usually a sequala of moderate to severe RE. BE is reported in around 10% -20% of patients w ith endoscopic esophagitis and up to to 44"i) of patients with chronic peptic esophageal strictures. ;'' findings from our morphological analysis confirmed BE in 2°- (l(>.X%) GERD patients, and 6 cases of them had dysplasia, including an one case of high degree dysplasia. fhis study of determination of occurrence of BE amongGERD patients shows that clearly depend on clinical manifestations of GERD among Mongolians. In group 2c were determined 19.3% case of BE with I case of dysplasia, that shown occurrence of BE and dysplasia no significant differs :::;,. Ilg patlCllls *oi* RE glOU|lS.

I he last we support that (il Rl) in Asia differs from that seen in IS and I urope in several aspects, not only rarer ol (il Rl) prevalence as a whole but a 1st i severer form of erosive esophagitis. Bl . and esophageal adenocarcinoma have lower in \sian eountnes. Ourstudy showed clinical features ol (il RD similar in Asian region like increasing rate of GERD, mild severity of Rl But differs from them by high frequency ol Bl .and combination of Up-associated gastroduodenal chronic pathology among Mongolian (il Rl) patients. I herefore we record that peculiarity of hospital based GERD in Mongolia is the association ol gastroduodeanal pathology. According to clinical manifestations, depending on morphophy siological appearance of esophagus ami stomach we suggest todiv ideendoscopic positive GERD patient-- into ! subgroups: independent Rl . RE with combination of gastritis, and Rl associated peptic ulcer.

finally, this approach focused oui attention *on* different forms of GERD patients may not share similar pathophysiological mechanisms, and that several mechanisms may result in symptoms *o* GERD. And different GERD patients do not share similar features, they have different diagnostic and therapeutic managements

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THE STUDY OF PARANOID SCHIZOPHRENIA CLINICAL FORM

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Abstract

The stud) intends to research clinical forms of schizophrenia according to the ICD-10 Class ideation of Mental and Behavioral Disorders[1]. I he paranoid form of schizophrenia among fourth forms was identified in 59.2% of cases and formed the biggest group. The study was conducted on 71 patients in the age from 10 to 49 years old. and 44 were male and 27 were females. Among all patients with paranoid form of schizophrenia, the beginning of disease was in the average age from 23.5 10.8. and in 52.1% cases schizophrenia began in the age from 20 to 29 years old. The research showed that among 7] investigated patients m 25.3% disease started acutely, in 47.9% sub-acutely and in 26.8% slowly. The visual and auditor) hallucination (p <().(M)01). delusions of relation (80,2%). delusions of affect ion (66.1%). delusions of persecution (59.1%) were discovered among paranoid schizophrenia patients. In the clinic of paranoid form of schizophrenia were delusions syndrome in 4.2%. hallucination and delusions syndrome in 49.3%. Kandinski-Clerambault's syndrome in 21.1%. paraphrenic syndrome" in 25.4%.

Keywords: schizophrenia, paranoid, hallucination, delusions, paraphrenia.

INTRODUCTION

According to the ICD-10 classification schizophrenia divided in to F20.0 1-20.9 groups.' The main forms of schizophrenia are paranoid, hebephrenic. catatonic and simple. By the records of WHO. there are 24 million people with schizophrenia in the World In Asia, the number of people with schizophrenia *on* 1000 of population is 1.8 3.8.[!] And in Mongolia by the research of N.Oryol. Sh.Dorjjadamba, S.Byambasuren and L.F.rdcnebayar (1996) there are 1.08 +0.86 schizophrenic ill patients in 1000 of population. There are no difference between male and female among patients w ith schizophrenia. According to research of Matveev V.I. from Institute of Mental Health in former Soviet Union. 70% of schizophrenia was beginning in the age of 1 5-45 . and probability of beginning of disease essentially increased in the age of 20-29.' Anderson . Kaplan . Sedok . Gelcler . Get divided all symptoms that take place in schizophrenia for two groups: negative and positive.

Autism, affect, ambivalence, associative changes are negative symptoms and called as "four *"A"".* The hallucinations, delirium, catatonia belonged to positive symptoms. In all clinical forms of schizophrenia, negative symptoms can be available. However, the clinical forms of the disease were differed from each other by the positive symptoms/ •*•"*

MATERIALS AND METHODS

Seventy- one patient (44 male and 27 female) was investigated in the Center of Mental Health and Narcology :and the State Mental Hospital.

In the research, there are used objective and subjective anamnesis, follow-up observation, retrospective and katamnestical research methods, and current mental status of the patient.

All patients were filled up special research card that also was completed by the information from history of illness and outpatient's follow-up card. All indices were processed with use of SPSS 9 program.

RESULTS

The paranoid form was identified in 59,2% cases (n=71) among all other clinical forms of schizophrenia. Compare with average age of beginning of all cases of schizophrenia (21,7^0.64) the average age of patients with paranoid form was 23,5±0,8.

We studied age and sex of patients on the time of beginning of schizophrenia

The beginning of schizophrenia in 52,1% cases happened in the age 20-29 years old and male suffered from this disease more than female (Table 1).

Table 1. Age and Sex of patients in the beginning of schizophrenia

	Age tjroiips				Total	
Sex	10-19	20-29	10 19	•tO-49 50		
Male	12	'1	' 9		11	61.9".
Female	9	7f>		1	27	38,2%
N	21	37	10	3	71	
hiUll	29 6*«	52.1",,	1 1 l«o	I "•„		li Ki"„

The research showed that among 71 investigated patients in 25.3% disease started acutely, in 47.9% sub-acutely and in 26.8% slowly.

Among patients with paranoid form in the preceded period were identified following negative symptoms: autism 41 patients (57,7%), apathia 17 patients (23.9%), hypobulia 37 patients (52.1%), sleep changes 26 patients (36,6%).

Table 2. Symptoms identified in active phase of paranoid schizophrenia

Identified common symptoms	n	%
Visual hallucination	41	61.9
Auditory hallucination	52	73.2
Visceral hallucination	23	32.4
Paralogic thinkirm	50	70.4
Symbolic thinking	42	59.1
Affective thinking	35	49.3
Philosoophizing	46	64.8
Delusions of relation	57	80.2
Delusions of affection	44	61.9
Delusions of sspecial meaning	33	46.4
Delusions of poisoning	31	43.6
Delusions of persecution	40	56.3
Psychic automatism	38	53.5
Visceral automatism	17	23.9
Motor automatism	16	22.5
Oligophrenia	10	14.08

The positive symptoms such as visual and auditory hallucinations, paralogic thinking and philosoophizing. delusions of relation, delusions of persecution, delusions of affection are very common in paranoid form (fable 2). The following diagram showed structure of positive symptoms.

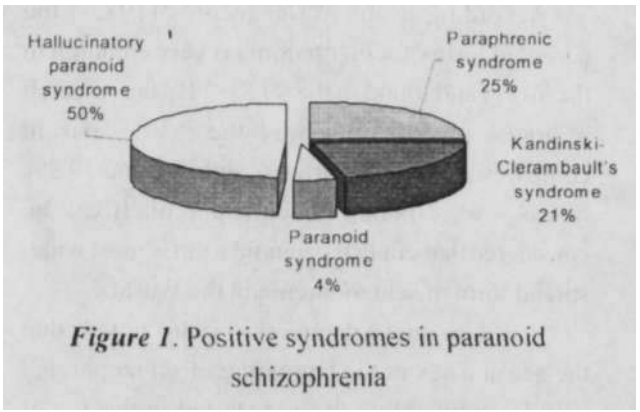

Figure 1. Positive syndromes in paranoid schizophrenia

Paranoid syndrome 4%

Figure 1. Positive syndromes in paranoid schizophrenia

In the end of schizophrenia positive symptoms decreased and negative symptoms increased. One of the common negative symptoms that displayed in the end is autism, that symptom was in the 50 cases or 70,4%.

In the all forms of schizophrenia in the course of time patients lose the ability to work in various degree. We studied loss of ability to work among schizophrenics with paranoid form.

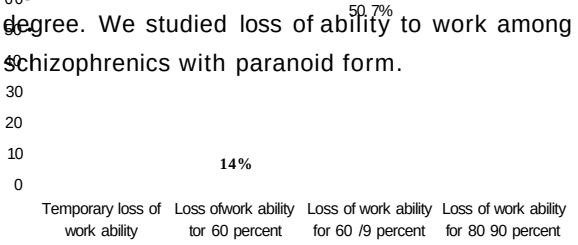

Figure 2. Schizophrenics work ability degrees

From figure 2 the 91.6% of patients lost work ability in the deep degree.

In our research we study duration of schizophrenia and found following indexes.

Table 3. The duration of stages paranoid form of schizophrenia.

Phase~~~~-~-	M (on \ears)	G (on years)	-< m (on years)
Prodromal	15	2.6	0.4
Active	7.8	4.5	0.6
Residual	4.8	3.1	0.6

The paranoid form of schizophrenia continued from 8,3 to 10.3 years and after that turn into residual phase.

The residual phase of schizophrenia usually fin-

ished by the death of patient.

DISCUSSION

According to the WHO records (1972) the paranoid form of schizophrenia is very common in the World and found in the 39.8%." By the research of Tomsk investigators was the 75%"', and in eomparcson our slud\ it was almost same 59.2% of eav. •> were paranoid schizophrcnia.lt can he considered that clinical paranoid form is most widespread form of schizophrenia in the World.

Garikov and Sncgnevski (1986) noted that the age and sex in the beginning of schizophrenia was determined that disease started in the age of 20-29." [i:] Our study certifies same figures. Hut. in the research of sex among patients with various forms was no difference in sex (c· 0.13) but among patients with paranoid form this index was no statistical significante(p>0.05),

We concluded that schizophrenia was beginning sub-acutely and slowly in 74.7% of cases, and I was tne same with other researcher's opinions that this disease in rare cases started acutely.[1, "]

fhe researches of Alimkhanov . Blgazina . Sokolova found out that paranoid form of schizophrenia hallucinations and delusions were most common.'"[1] in our case, we bade same figures: visual and auditon hallucinations (p<0.0001). delusions of relation, delusions of affection, delusions of persecution were also common.

We studied work ability of paranoid form schizophrenics. 91.6% of patients have a deep loss of work ability. This result was identical with other researches, that notice about 10% of schizophrenic patients can return to the work."

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EFFECT *QVZYGOPHYLLLM POTAN1NU MAXIM ON* HISTO-PATHOLOGICALAND ENZYMATIC CHANCES IN EXPERIMENTAL LIVER INJURY OF RATS

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Abstract

I he aim of the stud) was to evaluate the antioxidant action of the medicinal herb *Zygophylhim Potaninii Maxim on* rat liver hepatitis induced bv carbone tetrachloride (CXI,), and the content of selenium in this herb. The results showed that the content of selenium in the surface part of *Zygophyl'I'um Potaninii Maxim* was 0.34 ppm, w hile in the infusion it was 0.14 ug/ml and 0.12 ug/ml in the extract.

Zygvphi/lum Potaninii Maxim water extract at the dose of200mg/kg. (X'l. was diluted with heliante oil (I '4 v/v) for experimental groups and these treatments were administrated three times in a week for a period of 12 weeks.

Therefore, the aim of the present studv is to investigate the possible protective role of selenium on the experimental liver cirrhosis and some enzyme actix ities in blood plasma from rats.

Based upon these results, selenium may play an important role in the preventive indication of hepatic cellular injur) inducted bv carbon tetrachloride.

Keywords: *Zygophillum Potaninii Maxim:* selenium: atomic absorption spectrometer: liver enzymes: injur): carbon tetrachloride:

INTRODUCTION

The liver is especially sensitive to carbon tetrachloride. commonly used as an experimental model for the injur) and cirrhosis in the liver of the rats [4], Carbon tetrachloride is metabolized to haloalkane radicals, these radicals may cause the oxidative damage of lipids lipoproteins and other cellular components, such as enzymes, nucleic acids and proteins [5]. Oxidative damage of these components is being identified as an important factor in the etiologv of degenerative human liver diseases. Several antioxidants were scavenged free radicals and these radicals in hepatic cellular structures mav increase the cellular degeneration. This process mav be able to affect the levels of liver enzymes due to damage of cellular membrane. Thus, abnormal levels of the liver enzymes in plasma are usually indicative of the hepatic cellular injury in experimental animals [5,4,5,6,1].

Selenium is an essential element, plays an antioxidant role, binding active site of glutation peroxidase (GSI IPx). The most important metabolic roles of selenium in mammalian cell occur due to its function in the active site of selenoenzyme-tiSI l-l'x. GSII-Px not only protects cells against damages by free radicals but also permits regeneration of a membrane lipid molecule through reacv lation[s]. Antioxidants mav prevent oxidative damage caused bv free radicals in biological structures. Interactive relations between antioxidants and carbon tetrachloride may change the toxicity of hepatotoxic agent [i, q]

The interrelationships between protective effects of the antioxidants and toxic effects of carbon tetrachloride have been investigated and it has been reported that administrations of vitamins A [1], C [10,11], E [4], selenium [17], selenium-vitamin [3] and B-carotene [2]- protected the animals from some harmful effects of carbon tetrachloride. Therefore, practical and effective methods for prevention of the liver injury are very important. The present study was designed to investigate the effects of selenium on activities offline-

tional liver enzymes in blood plasma and on the liver fibrosis and cirrhosis generated by carbon tetrachloride in rats.

MATERIALS AN I) METHODS

Plant material

The fresh leaves of Zygophylhitn Potaninii Maxim were collected personal I) in the late summer season in the forest area Of Gobi-Altai province of Mongolia and authenticated b\ specialists of the Dept. of Pharmacology. Health Sciences University and Dept. of Plant Systematica of Herbarium. Institute of Biology. Academy of Science Mongolia, flic leaves were fresh dried, powdered and kept for water extract.

Preparation of the herbal water extract

I he water extract was prepared referring to the clinical use of the herb prior to animal treatment. I g of powdered leaves were incubated with lOmlofdeionized water for 15 minat 10()°C8 centrifuged at 3000 rpm for 10 min and supernatant was diluted 10 times with deioni/ed water for further use in animal treatments.

Measurement of Selenium concentration

1 g of dried leaves was burned at temperature of 53()°C in the furnace for 6-7 hours and made into ashes. Ash was dissolved at a temperature of I50°C in 10 ml of UNO, with a concentration of 1:1. The selenium concentration was determined using atomic absorption spectrometer (Pcrkin-Flmer Model 5000 Germany) equipped with Perkin-Flmer HGA-500 graphite furnace. Pyrocoated graphite tubes were used. The absorbance was measured at 196.0 nni with a spectral bandwidth of 0.7 run. A selenium electrodeless discharge lamp was operated at a power setting of 6 watts. The graphite furnace settings consisting of dry ing. charring and atomizing cycles are listed in Table 1.

***Table** I.* Graphite Furnace Settings

	Temp (°C)	Ramp (sec)	Hold (sec)
Dry	120	20	25
Char	400	20	20
Atomize	2400	5	3

I lie purge gas was argon. During the atomization cycle the purging gas stream was interrupted by programming "stopped flow" control to increase the residence time of the free selenium atoms in the light beam and to enhance the sensitivity.

Animals and treatments

This study was carried out on 30 Wistar albino male rats weighing 200 250 gbody weight. All rats were fed rodent pellets and drinking water ad libitum. I he animals were random!) divided into three equal groups containing 10 rats housed in cages at room temperature during the study.

The first group was used as control and onlv placebo (physiological saline 0.9%) was injected subcutaneously. The second group was subcutaneously injected $CX'I_4$ (0.8ml/kg body weight) dissolved in 0.5 ml heliante oil. The third group was subcutaneousl\ injected (.'('I, 0.8 ml/kg plus 1:10 *Zygophillum Potaninii Maxim* water extract at the dose of 200mg/kg. CO, was diluted with heliante oil (1/4 v/v) for experimental groups and these treatments were administrated three times in a week for a period of 12 weeks. Mortality rates were among 5 20%. which are similar to those reported by investigators using this model[1]". Alter 24 h of the last dose being administrated, the blood samples were taken and the animals were sacrificed under ether anesthesia. The abdomen was opened and the liver was removed and fixed in formaldehyde (10% v/v) for histopathological examination CCI_4 was purchased from Merck AG (Darmstadt. Germany).

***Obtaining** of **the** blood samples and enzyme analysis*

The blood of all animals was taken by cardiac puncture 1 2 h after the last application of CCI_4 and water extract *Zygophillum Potaninii Maxim.* Whole blood samples were collected in the heparinizedtubes (Beckon Dickinson Vacuntiner System Cedex. France) subsequently centrifuged at I 500xg for 1 5 min in a Heraus Inst Mega Fuge 10 and their plasma was removed into disposable-pipettes. In plasma samples, the activities of aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP) and gamina-glutamyle transferase (GGT) were deter-

mined b\ an autoanalyzer (Technicon RA-XT,\e\\ York. I[1]SA).

Histopathological examination of the liver tissues

Liver specimens were embedded in paraffin for anordinarv histological examination and sectioned 3 5 mm serial sections using a rotary microtome. The sections were stained with hematoxylin and eosin (H&E) for histological observations. The histological analyses were performed unawares from group separations by light microscopy. The hepatic injuries were assessed according to Manna et al. (1996). Histological grading was made according to four severity grades: 0 (none) no fibrosis and normal liver architecture; I (mild) fatty degenerations around portal areas and central veins fibrosis increased in portal areas and sinusoidal space and regular liver architecture: II (moderate) thin fibrous septa present connecting portal areas and pseudolobules seen in frequently: and III (severe) thick fibrous septa and collagen bands accompanied by pseudolobules.

Statistical analysis

Data were expressed as mean ±SD. Significance of difference was evaluated using Student's t-test and $p<0.05$ were taken as significant.

RESULTS

The concentration of selenium in the surface part of *Zygophyllum Potaninii Maxim* was determined to be 0.34 ppm. while in the infusion it was 0.14ug/ml and in extract 0.12 ug/ml.

The levels of AST. ALT. ALP and GGT are shown in Table 2. While the activities of AST, ALT and ALP were significantly increased ($p<0.05$; $p<0.05$ and $p<0,01$; respectively). GGT activity was not statistically affected ($p>0.05$) by CCl_4-injection. In addition, the differences between the activities of AST. ALT and GGT (except for ALP) in CCl_4-groupand the levels of AST, ALT and GGT in group of CCI, plus selenium were not significant but the values of ALP was increased in both CG_4 and CCl_4 plus Se-groups($p<0.01$ and $p<0,01$; respectively). While the levels of ALT and ALP in control-group were lower ($p<0,05$ and $p<0.01$; respectively) than those of that in both CCl_4 and CCl_4 plus Se-groups. There are no statistical difference between the values of AST, ALT and GGT in control-group and the values of the same enzymatic parameters in CCl_4 plus Se-group (fable 2).

Table 2. Enzyme activities (U/L) of AST ALT Al.P and GGT after I 2th week in all groups

Groups	AST	ALT	ALP	GG1
Control	47.48*2.99	41.9*2.81	59.3*3.1	7.83*1.64
CC\,	72.86±2.35**'	51.73*1.2**	79.5*4.21"	14.6*2.0
CCl_4+Se	52.25+1.1—	34.07* 1.4***	863*3.6*'	5.1*0.85""

*Statistically signi.canl according to control-group *p<0,05 and **/>• (1.01. Statistically significant according to CCIygroup ***/•>• tl.01*

Histopathological examinations showed that CCl_4caused hepatic injury. These histopathological changes signi.cantly decreased in animals treated with selenium plus CCL, in compared w ith the group injected only CCI, (fable 3).

Table 3. I listopathological grading for hepatic injury in liver of control CCI, and CCI, phis selenium groups

Groups	I listopathologieal				
	n	0	1	11	III
Control	1')	1')	I)	(1	I)
CCI,	16	0	0	5	11
CCtt+selenium	15	I)	6	8	4

The liver specimens in control animals showed no evidence of histopathological alterations. The chronic effect of CCl_4 on the rat liver usually showed a typical fibrotic and cirrhotic appearance. The collagen bands bridged between portal areas and portal areas or were extended from central regions to portal areas. Broad fibrous septa were often seen surrounding the liver lobulus. These biopsies were interpreted as strong suggestion of cirrhosis (Figure LA).

The liver sections obtained from animals treated with selenium showed a consistent reduction in necrotic fibrotic and cirrhotic processes of the liver. These specimens showed more regular liver architecture in which only thin fibrous bands were seen to connect portal areas (Figure 1 .B).

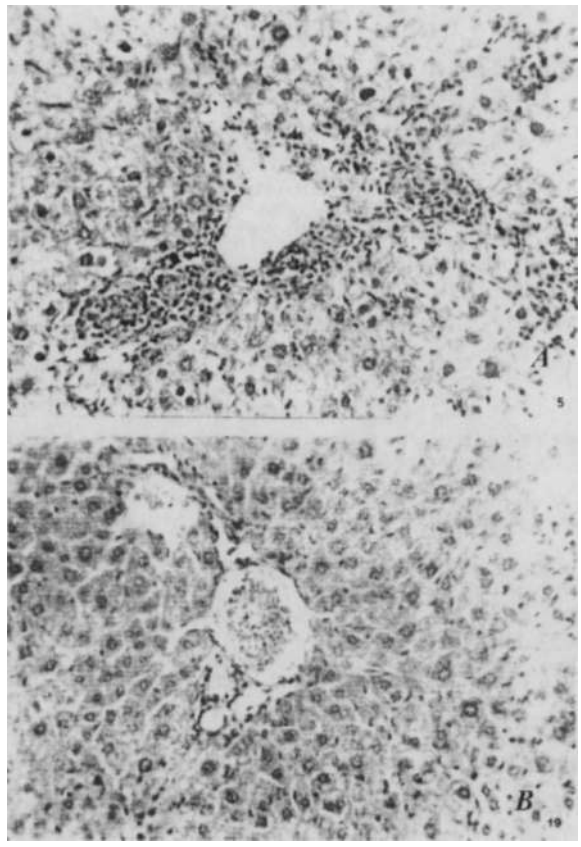

Figure *1.* Representative slides of H&E-stained liver tissue from (A) CCl_4-injured rats group shows a typical cirrhotic appearance thick fibrous septa were seen bridged between from central regions and portal areas and prominent intralobular inflammatory reaction consisting of granulocytes and mononuclear inflammatory cells: (B)CCI, plus selenium-group fibrous changes were seen in portal areas and low degree intralobular inflammatory reaction consisting of granulocytes and mononuclear inflammatory cells.

DISCUSSION

In vivo and in vitro experiments demonstrate that the antioxidants play protective roles against free radicals "[71,,)]. The liver is an important target organ for CCl_4 and the hepatocytes may be damaged by haloalkane free radicals produced during biotransformation of CCl_4 '[:]. CCl_4 is metabolized in mixed function oxidase system utilizing the nicotinamide adenine dinucleotide phosphate (NADPH)-cytochrome P-450 electron transport chain at the level of the hepatic smooth endoplasmic reticulum and the hemolytic cleavage may occur during the formation of the haloalkane free radicals such as trichloro-methyle (CCI,) radical and trichloromethyleperoxy (CCL.OO) radical. These radicals cause the oxidative damage of lipids, lipoproteins and other biochemical parameters such as enzymes, nucleic acids and proteins. Damage of these components may be an important factor in the pathogenesis of different liver diseases. In addition. haloalkane free radicals may bind to cellular macromolecules and can react with free amino groups on proteins and then the macromolecules may lose their physiological functions '[:] '". Thus, the AST. ALT, ALP and GGT may be mobilized into blood plasma and serum levels of these enzymes may increase. I ligh levels of these enzymes in serum are usually indicative for acute hepatitis in experimental animals •'"'and humans [::] '-[2]*. Indeed. it has been reported that haloalkane free radicals were held responsible for CCI. hepatotoxicity and caused the oxidative injur) of unsaturated lipids in some cellular components of hepatic tissues

The antioxidant Se may diminish the hepatotoxic effects of CCl_4-metabolites by means of their interactive relations with intermediary metabolites. The most important antioxidant aspect of Se is its function in the active site of selenoenzyme glutathione peroxidase. GSH-Px containing Se cata-I) zes the destruction of hydrogen peroxide and lipid hydroperoxides via reduced glutathione "~\ Also. GSH-Px and the other antioxidants such as superoxide dismutase and catalase may protect cellular membranes against oxidative damage caused b\ toxic free radicals and so may partially diminish certain types of the hepatic cellular degeneration. In addition. GSHPx not only allows the removal of the toxic ROOH (lipid peroxidation peroxyde) but also permits the regeneration of lipid molecules through reacylation in the cellular membrane [ls:]~. Reactive metabolites are produced during biotransformation of CCL and these metabolites may cause cellular death in the liver. AST, ALT and ALP may be released into blood plasma and serum levels of these enzymes may increase as due to the cellular damage in the liver'". Thus, the levels of ALP in blood plasma may also increase in the early periods of liver damage ". High levels of AST. All and ALP in serum are usually indicative of disease

and necrosis in the liver of animals " ami humans Indeed, it has been reported that haloalkane metabolites were held responsible for CCI, hepatotoxicity and caused the oxidative damage of unsaturated lipids in some cellular components of hepatic tissues . Selenium may also diminish the harmful effects and the formation of the reactixe intermediary metabolites of CCl_4. If selenium deficiency occurs in tissues of the body the cellular membrane may be damaged. Through its antioxidant functions selenium max also prevent the hepatic cellular injury .

The interrelationships betxxeen protective effects of antioxidants and toxic effects of CCI. have been investigated in different studies. Administrations of vitamins A \ C" . E and selenium vitamin E"" "and B-carotene could protect the liver of rats from some harmful effects of hepatoloxic chemicals. Interactive relations between antioxidants and CCI, may change the toxicity of this hepalotoxic agent. These effects of selenium on toxicity of CCl_4 may also be attributed to the antioxidant function of GSII-Px containing selenium. Indeed, selenium is known as an antioxidant ability to inhibit oxidative processes of lipids and lipoproteins in cell membranes . The activities of AS1. Al.l and ALP xvere significantly increased ($p<0.05$; $p<0.05$ and $p<0,01$: respectively), but GGT activity was not statistically affected ($p>0,05$) by CCl_4-injection. The values of ALP were increased in CCI, and CCI, plus Se-groups ($p<0,01$ and $p<0.01$: respectively). In addition, the levels of ALT and ALP in control-group were lower ($p<0,05$ and $p<0.01$: respectively) than those in both CCI, and CCI, plus Se-groups (fable 2). Our results are accordance with the results of the other investigations performed using antioxidants and CCl_4 4.5 I I.I8.14.20

There usually was the typical fibrotic and cirrhotic appearances in sections of the liver tissue in the CCI,- group. Thick fibrous septa were seen bridged between from the central regions and portal areas and prominent intralobular inflammatory reaction consisting of granulocytes and mononuclear inflammatory cells. These biopsies were interpreted as strong suggestion of cirrhosis (Fig.l .A). Cell injury coagulative necrosis inflammatory infiltration granulocytes and mononuclear inflammatory cells xxere occasionally observed in the liver sections of CCIj plus Se-group (Fig. 1 B). These appearances are generally in agreement with the results of the investigations performed using antioxidants and hepatotoxic substance . The necrotic fibrotic and cirrhotic changes in the liver sections were reduced after being treated with selenium. These results of the present study suggest that selenium can diminish liver injury fibrosis and cirrhosis induced by CCI,. Indeed, there are antioxidant functions of Se in inhibition of the oxidative processes of lipids and lipoproteins in cell membranes .

We have been considering that the administration of *Zygophillum Poianinii Maxim* may have a therapeutic role on the liver toxicity induced by CCI,. Therefore, such ongoing studies investigate the possible protective role of *Zygophillum Poianinii Maxim* against the effects of CCl_4.

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TRANS-ARTERIAL EMBOLIZATION OF HEPATOCELLULAR CARCINOMA WITH LIVER CIRRHOSIS

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Abstract

In our study we included a total of 26 patients with splenomegaly caused bv cirrhosis and 401 patients with liver cancer and their diagnosis were confirmed by high lev els of serum alpha-fetoprotein (AFP) values, ultrasonography, computer tomography (CI) and angiographic findings. The Trans-Arterial Embolization (TAE) was done in 291 patients experiencing the last stage of cancer with cancer sizes of 3.0-9.0 cm and in 43 inoperable patients with cancer si/es of 10.0-1 3.0 cm. Patients v\ith TAE had a median survival of 19.6 months while that of the control group was only 10.2 months (P<0.05). lor 74 patients treatment was effective and they lived up to 3-5 years. TAE is effective on prolonging survival of patients with L.iver Cancer and Cirrhosis. The combination ofsurgical treatment with transarterial embolization is effective method of treatment for the liver cancer located in the sixth segment of the right lobe and expands the lifespan for a long period. The embolization of spleen blood vessel is more effective for the B type of cirrhosis.

Key **words:** trans-arterial embolization, hepatocellular carcinoma, liver cirrhosis

INTRODUCTION

Liver cancer is considered one of the most widely spread tumor around the world and every year approximately I million people are dying and 315.0 thousand people are afflicted.[1] [2] [3]

In Mongolia the liver cancer is occurring in 39 cases of 100.000 people and the main causes of the cancer are cirrhosis, virus hepatitis. These diseases haven't decreased in the last decade and remaining constant. The problem has been taken into consideration and doctors, researchers are still looking for different ways to tackle the problem. 80% of people who have liver cancer is combined with cirrhosis and 90 % of them are getting medical assistance when the cancer is in the last stage. 5.3-6% of them are having operations.

The main causes of the liver cancer and chronic-hepatitis are hepatitis B. C viruses, aflatoxin and cirrhosis. HBx protein of the hepatitis virus defects the mutation in the p-53 tumor suppressor gene and causing liver cancer after 20-30 years.[4] [5] [6] [7] In Mongolia 96.6% of liver cancer is caused by virus and only 3.4% of it is not.

METHODS AND MATERIALS

From 1995-2003 at the Department of Angiography of Shastin Memorial Clinical Hospital, we did study on 26 patients with splenomegaly caused by cirrhosis and 401 patients with liver cancer and diagnosis was based on high serum alpha-fetoprotein (AFP) values, ultrasonography, computed tomograph) (CI) and angiographic findings. We selected another 165 patients with liver cancer who had not treated either TAE or chemotherapy as a control group. We used Hitachi HDI520TM and Philips DSA suite for diagnostic angiography and embolization treatment.

1. 5-6F- 65-80 cm RH Celiac catheters were inserted in Celiac trunk and 20 mg contrast medium was injected by automatic injection at 8 ml/sec and 10-20 ml/sec and serial X-ray pictures were taken.

2. RH, Cobra and Vesceral catheter which was transmitted through celiac trunk, was positioned in common hepatic artery and the contrast medium was injected. After that defined the positions.

collatarel and branches of the main Feeding artery of tumor. In the main feeding blood vessel of the tumoramicrocatheter was positioned going through the catheter leaded by Tracker 1 8.

3. Through the microcatheter anti-cancer drugs 40-60 mgof Doxorubicini or Mitomycini C were injected as well as l.ipiodol fat block material were injected. After that an appropriate embolic material (Sponge!, geifoam) was chosen for the cancer and full and half embolization were done in feeding vessel of tumor and in branches of the spleen arterial '2..v4; level. Returning of the contrast medium substance and the re-occurring of the cancer as well as the embolization were checked b\ injecting 5-10ml of contrast substance. In negative case, the catheter was removed back and stopped the blood flux w ith sterilized bandage and for 20 minutes pressed it with cold compress and the patients expected to stay in bed for 24 hours.

Statistical analysis was performed using the c2 test to compare differences between groups. Results were given as the mean ± standard deviation. Comparisons between group means were performed using Student's? test. Univariate and multivariate analyses using Cox proportional hazard models were performed to evaluate clinical parameters associated with liver cirrhosis and calculate odds ratios (OR). The parameters included in the analysis were age. sex. serum albumin levels, bilirubin levels. AS I and ALT values. AFP value, presence of cirrhosis, presence of ascites, presence of encephalopathy. Child scores, tumor size, sonographic pattern, uni-or multifocal tumor, stage of the disease, and TAE treatment. Significant parameters in the univariate analyses were analyzed with multivariate analysis. The level of significance was set at /><().05.

RESULTS

Results of liver cancer treatment

Sex ratio of the patients who had TAE **was** 1.9:1.0(male, female)

Table I. Comparing results of TAE treatment

1	1 ess than 6 months	19.7
2	6 12 months	31.9*
3	1-2 years	35.2**
4	3-4 scars	10.0
5	More than 5 \cais	3.2*

k - *Leveloj'significantdifference I' 0 05*

***-Level of significant difference P 0.001*

Table.2. Comparison of the size and the position of the cancer with age.

(ancer location	SUM and	jr. ^	MI-3.0 cm	• I	E v 1 •X	E	9 A	Percentage	E H
		n	**43**	91	124	**76**	**67**	4(11	
.e si	**1 segment**	139	**31**	15	**38 •**	**47**	**8***	34.7%	**2.4**
	2 segments	**89**	**~**	10	**41**	21	**1 7 "**	22.2%	**4.3**
	3 segments	22	**-**	**-**	**-**	**6**	**16 ***	**5.5%**	**I I**
Lett lobe	**1 segment**	**65**	12 *	**39**	14	**-**	**-**	16.2%	**1.8**
	2 segments	**60**	**-**	**27**	31 **	*2*		**15.0%**	**1.7**
In both lobes		**7**	**-**	**-**	**-**		**7**	**1.8%**	**0.4**
Intel-hepatic **metastasis**		**19**	**-**	**-**	**-**		**19**	**4.6%**	**1.0**
Total		*401*	*10,7%*	*22.7%*	*30,9%*	*19%*	*17,6%*	*100%*	**-**

* - *Levelofsignificant difference - P' 0.05*

** - *Level of significant difference I' 0.001*

Tht; Trans-arterial embolization (TAE) \\;i> done in 291 patients experiencing the last stage of liver cancer with cancer sizes of 3.0-9.0 cm and in 43 inoperable patients with cancer sizes of 1.0-3.0 cm (Table 3). After the treatment. 29 out of 43 patients managed to live for 4-6 years. For 91 cancers which sizes were 3.1-5.1 cm soft embolization was combined with embolic material SpongeI' was used to do hard block. Then the cancer was calcificated and coated. For 74 patients treatment was effective and they lived up to 3-5 years. For the patients with cancer sizes of 9.0-11.0 cm lipidiol was mixed with chemotherapy agent and 64 of them lived up to 1 year.

It shows that cancer was located in the right lobe of the liver for 250 (62.4%) patients (Table 1). According to the statistics (P<0.001) the cancer based on cirrhoses is common on the right lobe of the liver. From our study 60 patients who had cancer in left lobe of liver especially 1 -4'" segment and 23 (74.1 %) out of 31(51.7%) patients whose cancer size was 5,1-7,0 cm the result of treatment wasn't very effective and they were able to live only 6 months to 1 year. Out of 22 patients whose cancer was in the 6. 7. and 8^{h} segments of the right lobe, 17 of them were able to live 2-3 years and post operative complications were less, even the cancer sizes were large (9-11 cm) (Table 2).

Treatment result of embolization spleen blood vessel.

During 1997-2002 periods, we did embolization of the spleen blood vessel in 9 male and 1 7 female patients aged 6-49 years who were diagnosed with Hepatic Cirrhosis.

Table3. Embolization by Chirrosis Classification

	Child's classification of Chirrosis	*N*	*(%)*	*M±m*
1	A	*6*	23.1	8.4
2	B	16	61.5	9.7
3	C	4	15.4	7.2
4	*Total*	*26*	*urn*	

Before the treatment spleen sizes were 18-20 cm in 8 patients, 21 -23 cm in 14 patients and 24-26 cm in 4 patients. After I 5-30 days of embolization the spleen size decreased from 20 cm to 18-19 cm. alter 2 months to 14-16 cm, and after 3 months it became 11-12 cm (Figure I). The shrinkage of spleen was associated with disappearance of ischemic segments.

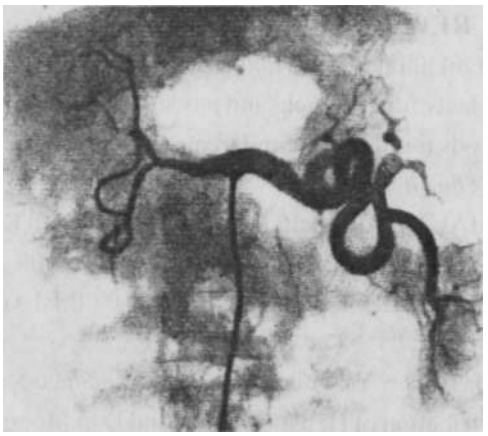

Figure 1. Angiographic image of Hypersplenism as nose bleeding, abdominal discomfort. Out of 401 patients who had the embolization 98 of them are still living for 1 -7 years.

DISCUSSION

Study result shows males are 3-4 times more contracting liver cancer for the first time than females. The reasons of this is connected with that males have HVC and in cancer cell express of androgen receptors and estrogen receptors are dominated. Also the cancer is dominated at the age of 50-59(F<0.001) which is similar to research done by other researchers."'" Comparing Japanese liver cancer researchers* results[1,12], 80.3% of the patients who had embolization surgery lifespan was expanded by 1-3 years. In our research there were 75.5% of blood supply normal structure, 24.3% of abnormal blood vessel branches and 4% of directly branched out of the main blood vessel or left liver lobe artery is directly branched out of celiac trunk. but 16.1% of right lobe of liver artery were directly branched out of mesentery artery vessel branched out of collateral. This result is very close to foreign country researchers" [N] and from this result we can .conclude that abnormal blood vessel structure is very rare among Mongolian people and further we need to do some research on it. 265 patients of M.Shagdarsuren (2002) who had transcatheteral

arterial chemoembolization, the lifespan is 60.8-+2.9% was expanded by 1 year. 48,5-4.3% was expanded by 2 years and 38.1 -4.9% was expanded by 3 years. These results were comparable to other researeh findings.

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SIGNIFICANCE OF OLIGOPEPTIDES IN THE DEVELOPMENT OF ENDOGENOUS INTOXICATION DURING POSTTRAUMATIC ACUTE PERITONITIS

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Abstract

The research is based on an analysis of clinico-laboratory manifestations of endogenous intoxication in 103 patients with peritonitis after injury of the abdomen. Posttraumatic acute peritonitis(PTAP) was found to develop in 103 (20,6%) out of 500 patients with internal injuries of the abdominal organs and open wounds of the abdominal cavity.

The concentration of middle sized proteins (MSP) change during the course of each type of acute peritonitis with a high probability of intoxication by previous components.The first days after surgical operation the dynamic exchange of the middle sized proteins and those previous components are similar. however the decrease in concentration of middle sized proteins occurs later than the decrease previous components.

The concentration of MSP during peritonitis should be used an important criteria to early-detemine the severity of endogenous intoxication, to examine the health status of patients and to develop further treatment strategy.

Mongolian blood serum MSP average is at 0.248+0.03 units. No difference in values of varying gender, age and living location based on statistical value was proven.

Keywords: oligopeptides, middle sized proteins, posttraumatic acute peritonitis, endogenous intoxication. proteolytic enzyme, previous index

INTRODUCTION

The rate of death hasn't decreased, despite success in the solution of organisational and surgical aspects of the problem. The main reason for this is the heavy endogenous intoxication which developes at some stage with all patient-cases.[1] It is a known fact that development of endogenous intoxication is determined by increasing methabolic disorders, independent from the basic process.[2]

Protein toxins are substratum responsible for the appearance of many pathological effects. Protein toxins include so-called "'Oligopeptides", "middle sized proteins", "endogenous components" and "middle mass molecules" with a weight of500-5000 dalton.'[4 5] " Earlier conducted experiments show that the level of MSP may be used as a criteria for determination of stage of clinical status in cases of any endogenous intoxication, chronic kidney insufficiency, peritonitis and abdominal injury. [7. 8. «. 10. I I. 12, I?. 14]

The objective of this survey is to determine diagnostic significance of MSP for patients with posttraumatic acute peritonitis. As a result of this survey the following hypothesis was formulated: The level of MSP, which is an integral index of endogenous intoxication may be used as a criteria for determination of the stage of clinical status in cases with PTAP.

MATERIALS AND METHODS

The survey was conducted on 103 patients, ages from 6 to 76, hospitalized at the department of intensive care and thoraco-abdominal trauma with PTAP at the Central Traumatological Hospital of Mongolia. The clinico-laboratory and biochemistry

survey was done on the tlrst day of hospitalisation as well as during the following 5-7 days by a semi-automatic human analyzer "Humalyser-2000".

The level of MSP in patients and donors was determined by Gabrielyan N.I screening method[15]. For the determinamion of donors MSP level, specimen of frozen blood plasma from the Mongolian transfusiological center was analyzed.

Data of the laboratory analysis was statistically processed on EPI-INFO-6.0, SPSS-10.0 programms and medium arithmetical index, standart fluctuation using the evidence of T-criteria.

RESULTS AND DISCUSSION

Medium level of MSP of Mongolian donors is 0,248j 0.03 and shows neither any differences in age. gender, nor between rural and urban population (Table 1).

Table I. Medium level of MSPof Mongolian donors

Gender	Number of Specimen	Statistical index	Amount of MSP(opl.unit)
Male	60	M+St.D	•0253 +0.02
Female	99	M+St.D	*0245 +0.02
Total	159	M+St.D	[0248 HI.in

No differences in plasma levels of MSP in Mongolian donors of different ages have been noticed (Table 2).

Table 2. Level of MSP in blood by age group

Age group	Number of Specimen	Average level Oi"MSP(opt. unit)
10-20	5	*0.259
21 -30	92	1^0.247
31-40	39	*0,244
41-50	20	*0.260
Above 5 1	3	*0.238
Total	159	0.248

A possibility of statistically verifiable differences between the findings of foreign researcher and results of this survey due to specific uniqueness in organisms in Mongolians have not been found. During the PTAP of spread of peritonitis the survey of MSP level shows that MSP level increases respectively with the increase of spread of peritonitis process

The survey shows linear increase of MSP level during the PTAP development period, depending on the increase in the development of peritonitis(Table3).

Table 3. MSP level on spreading of PTAP

I Plasma index	Statistical index	Level of spread of PTAP		
		I';irlial	Diffuse	Cieneral
MSP	' I M~ ·~"s7tJ	•0.526-KU4	! "0.701-(1.12	"0.734-0.84

*margin in spreading of PTAP *P 0.05*

The comparison in increase of MSP average levels with those of a control group donor"s blood shows the following:

-Average level increase during partial peritonitis MSP 2.1 times

- During diffuse peritonitis it increased 2.8 times

- During general peritonitis 2.9 times.

We found that MSP levels during PTAP has been 1.3-2.8 times lower than during acute peritonitis caused by inflamable deseases of the abdominal cavity. This proves true far MSP level during acute peritonitis, caused by inflamable deseases of the abdominal cavity, found by foreign researcher compared to our study's findings.Our findings depend on availability of data on acute or chronical cases before onset of peritonitis in the abdominal cavity. MSP level during PTAP is lower than that during peritonitis caused by inflamable deseases of the abdominal cavity and this shows, that comparatevelv healthy people may suffer from PTAP.

The study found index dynamics to be the same during partial and diffuse peritonitis. But MSP level and leucocytar index of intoxication (LII) increased again during general peritonitis when compared to MSP levels during PTAP, rated with previous index of endogenous intoxication.

Besides this we found other indexes decreased, thus proving MSP to have more significance for the demonstration of intoxication, than other inde.xes(Table 4).

Table 4. Comparison of MSP to previous indexes of intoxication in relation to PTAP progress

Indexes	Statislieal index	**Level** of spread of PTAP		
		Partial	**Diffuse**	**General**
MSP op unit	M + **SID**	•0.520-I I] 1	•0,701+0,12	**•0** 734 **"x i**
1 II	M • SI I)	•2,9 • 0,7	•3,5 • 1.6	**•3,7 • 1 07**
I lrea **mg/dl**	M SID	•45,6;t 21.4	•62,9; 23.1	•46,1* 19,9
Creatinine Illg'dl	M j_ St D	**•l.l** rU.4	**•1,5 £0.4**	**•1,1** -0.26
Bilirubin mg/dl	M^ **SID**	0.78:. **0,16**	0.96 **i 0.75**	0.82 rO.45

P 0.05

Table 5. Stationary dynamics of MSP and previous indexes of intoxication

Indexes	Statistic al index	Stationary days			
		1	3	5	7
MSP.op unit 111	M-Nt.l) M+St.D	••0,521 + 1,1 •3,1 K>,9	••Q.603+0,15 •3,4+0,9	••0,578+0,17 ••2,7+1,0	••0,484+0,18 -
Urea. mg/dl	M+St.D	•47,9+20.6	•57,3+27,2	••47,5+28,09	-
Creatinin. mg/dl	M+St.D	* 1.1 +0,43	••1,3+046	••1.0+0,5	-
Bilirubin. mg'dl	M+St.D	•0,87+0,30	••0.93+0,44	••0.69.KU9	-

*Accuracy: *!' 0.05 **/>• 0,01*

During a comparative survey of MSP to previous indexes in the postoperative period. MSP level in patient's plasma w ith PTAP appears before the value of previous indexes, its concentration decreases later, because MSP is a sensitive index. Long term, because it remains in the body MSP becomes an index with high informative and clinical significance(Table 5).

The survey of interdependence of active proteolytic enzymes in abdominal exudate and MSP in patient plasma with PTAP shows, the activity of these enzymes to be stronger on the first day afteroperation and a sharp decrease during the following days. Plasma MSP activity tends to increase steadily after the first day after operation. A large amount of proteolytic enzymes in abdominal exudate is one of the factors showing an increase of MSP level in plasma. MSP levels of PTAP less than 0.6 units is labelled as group one. above 0.6 units as group two. The second group is more complicated than the first group.

This survey shows certain levels of MSP in blood plasma to haveconciderable clinical significance in early diagnosis of endogenous intoxication, particularly for control of dynamics during peritonitis. for diagnosis and selection of appropriate treatment method.

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TYMPANOGRAM RESULTS IN INFANTS AGEDO-3 AT ACUTE OTITIS MEDIA

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Abstract

The aim of this study was to explore how tympanometric indicators: tympanic membrane mobility. tympanic cavity pressure change in acute otitis media in 0-3 \ ear old infants. In order to achieve the aim the researchers lust captured changes in tympanic cavity in 60 0-3 year old infants with health) ears of age using tvmpanometric templates SAT-20, Maico. MA-640, then based on the first tlndings. tympanic cavitv changes were established in 60 children in acute otitis media and in 40 children after treatment. findings of our research revealed that tvmpanic membrane mobility in acute otitis media decreases to 0.21 +0.02 ml in 0-3 year old infants, tympanic cavity pressure was 226.314.7 dapa to deviated to negative. The research results have probed that this indicator ($p > 0.05$) is the accurate and reliable indicator for diagnostics of acute otitis media and control of recovery process.

Keywords: tympanometry, middle ear. tympanic membrane mobility, tympanic cavity pressure, acute otitis media.

INTRODUCTION

Studies of the medical experts revealed that 70-80% up to 3 year old infants experience at least one episode of acute otitis.[1] : Far drum vibrates when air pressure changes in the external canal *o\'* tympanic membrane and sound resistance increases. In functionally normal situation, the air pressure in the external ear canal and eardrum is normal.'[4]

In acute otitis media inflammation actively progresses in the tympanic cavity and membrane increases and secretes too much pus and blocks the tympanic membrane vibration, so internal pressure in the tympanic cavity changes. [5]'"

Many researchers successfully used the approach to assess inflammation level and middle ear status by measuring air pressure in the tympanic cavity and tympanic membrane mobility. [7!i" '"

Tympanometric test is the main objective approach to diagnose middle ear infection, including acute otitis media." |:

Any research has not been done to use tympanometric test in acute otitis media in Mongolia.

We captured changes in the middle ear cavity of children aged 0-3 at acute otitis media. To achieve this objective we have done followinge:

1. Established the changes in the middle ear cavity of children aged 0-3 with healthy ear.
2. Established the changes in the middle ear cavity of children aged 0-3 who are suffering from infection of otitis media.

MATERIALS AND METHODS

We have measured the changes in the tympanic cavity using the tympanometric templates SAT-20(Germany). Naiso-640(UK) and data was collected through the measurement of tympanic membrane mobility (collapsibility) in ml and middle ear cavity pressure in dapa.

60 children with healthy ears passed Tympanometric test, then 60 children who were infected with acute otitis media, with the eardrum. which has not been perforated, passed the test, 40 children, who have had full treatment and fully recovered from the acute otitis media passed the test at the late stage.

All middle ear cavity characteristics of children

aged up to year with healthy ear were measured and recorded by age group and on the basis of this measurement the correlation between the measurements was made by comparing the data of measurement in acute otitis infection and in recovery.

RESULTS

Out of 60 children with healthy ear 19(31.7%) were infants up to age I. 15(26.6%) were babies up to age 2, 26(41.7%) were children up to age 3. Findings of our research have defined that tympanic membrane mobility of children aged 0-3 with healthy ears in average was 0.490.02ml. middle ear cavity pressure was 981.9 dapa(Table 1).

Tabic I. Results of middle ear cavity measurements of Mongolian children aged 0-3 with healthy ears.

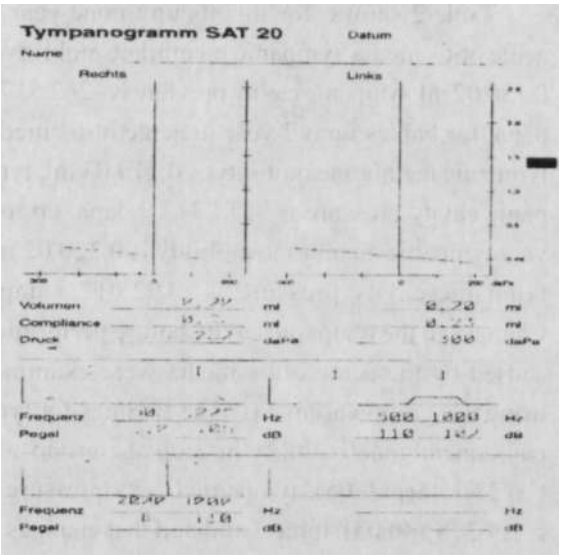

Figure J: Subject K11.. 2 year old. female. Normal tympanogram

Table I shows that for infants up to one year old with healthy ears tympanic cavity pressure is -98.01.9 dapa. tympanic membrane mobility is 0.490.02 ml. for babies up to 2 years with healthy ears tympanic cavity pressure is 98+1.8 dapa. tympanic membrane mobility is 0.49±0.02 ml. for childrens up to 3 years with healthy ears tympanic cavity pressure 99.02.0 daPa. tympanic membrane mobility is 0.490.01 ml (Figure 1).

Based on the indicators for the children with healthy ears we examined the changes in the tympanic cavity in acute otitis media.

It was found that tympanic membrane mobility of children aged 0-3 . who was diagnosed with acute otitis media as a result of bedside diagnosis. decreased to 0.21.02 ml and tympanic cavity pressure increased to -226.317.7dapa (table 2 Figure 2).

Table 2. Comparison of me;i niements of changes in the tympanic cavity before perforation caused by the acute otitis media

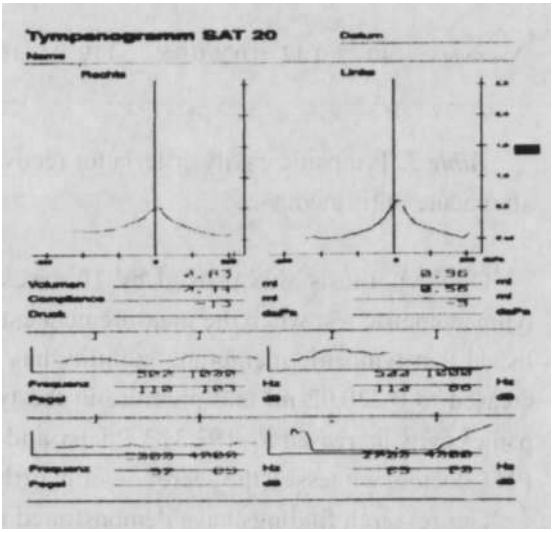

Figure 2: Subject II.. 15 year old. female. Tympanogram in acute otitis media.

Table 2 shows for infants up to one year in acute otitis media tympanic membrane mobility is 0.180.02 ml. tympanic cavity pressure is 262.51 7.3 dapa. for babies upto 2 year in acute otitis media tympanic membrane mobility is 0.21 0.03 ml, tympanic cavity pressure is 214.3 1 3.9 dapa. up to 3 year tympanic membrane mobility is 0.220.02 ml. tympanic cavity pressure is 192.012.5 dapa. Chanties in the tympanic cavity before perforation caused by the acute otitis media were examined using age group variable (t) The findings for tj mpanic membrane mobility in each age group was t'0.27-1,43($p<0.05$). tympanic cavity pressure is t 1.9-3.0($p<0.05$). It has validated that changes in the tympanic cavity do not vary due to age. I lowever the findings have proved that there are differences in indicators between healthy ears and ears in acute otitis media($p>0.05$).

When the changes in the t\ mpanic cavity were measured by tympanometric test a month later since the last treatment of acute otitis media, it was found that the results were closer to measurements of healthy status as tympanic membrane mobility became 0.470.2 ml. tympanic cavity pressure -199.011 dapa (Table 3).

Age group	n	Compl (ml) M±m	Press (dapa) Mini
1 year old	11	0.47±0.02i0.07	-118±l% 17.0
2 year old	15	0.48±0.03-.0.06	-I20±l2+ 16.0
3 year old	14	0.47+0.03+0.07	-H6tl7±16.0
Average	40	().47-0.02±0.06	-110+1 IU6.0

***Table** 3.* Tympanic cavity criteria for recovery after acute otitis media

Our hypothesis was proved by 14 cases of tympanometric test when the measurement established that tympanic membrane mobility has decreased to 0.220.02 ml and pressure in the tympanic cavity increased to-192.312.5 dapa and the ENT doctors witnessed the secretion of pyorrhea.

Our research findings have demonstrated that it is highly reliable that in acute otitis media there is change in tympanic membrane mobility and tympanic cavity.

DISCUSSION

Studies have proved that for healthy middle ears the tympanic membrane mobility is - 0.5 ml, tympanic cavity pressure is t 100 (-100) daPa. Findings of our research have shown that for children with healthy ears tympanic membrane mobility in average was 0.49 > 0.02 ml. that was 0.2 HO.02 ml in acute otitis media, in recovery it was 0.47i0.02 ml. tympanic cavity pressure for healthy ears - 98.01 15.0 daPa, in acute otitis media it was - 226.3114.7 daPa. in recovery it was - 119.0-i 11.0 dal'a. These changes were accurate from case to case and records resemble with similar research findings.

Fiellau- N ikolaisen(1981) who monitored and recorded the results of 44 children up to age of 3 for 6 months found that tympanometric pressure factors were negative for all subjects." There was agreement between his findings and ours. It proves that infants have considerable eustachian tube disorder which makes them volatile to acute media otitis, findings of our research have shown that all tympanometric test pressure indicators in 0-3 year old infants in acute otitis media were negative. This proves again the eustachian tube loss in infants of this age. This indicator also shows also why acute otitis media is experienced mostly in infants. The research established the relations between the clinical signs of acute otitis media and tympanic cavity changes and developed the basic diagnostic and treatment criteria.

In conclusion, it is completely reliable that in acute otitis media, tympanic membrane mobility changes to 0.210.02 ml, tympanic cavity pressure -226.314.7 dapa for the children aged 0-3. Common infection for infants aged 0-3 is disorder of tube auditory (eustachian tube) and it causes the acute otitis media. Tympanometric test results provide accurate and reliable information for diagnosing of acute otitis media and preventing it becoming chronic.

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Future events

Pharmacist's role in improving Health Care System

Invitation from the Chairman

On behalf of the 1 lealth Sciences I 'ni\ ersity, it is our pleasure to invite you to the First International Clinical Pharmacy Conference in Mongolia, taking place in Ulaanbaatar. Mongolia, from 21 to 23 August 2006.

I)uring > our visit to I 'Lianbaatar. \ ou will ha\ e the opportunity to meet with colleagues from all over the world, lo discuss the theme of the conference patient-oriented pharmaceutical care: Promoting rational uscol medicines.

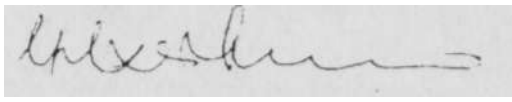
The conference will focus on the much needed statement on the "Concept of Pharmaceutical care" and the various functions of clinical pharmacy practice which include patient medication counseling. medication management, monitoring appropriateness of drug use. providing information, participating in drug selection, applying pharmacokinetic principles to designing drug regiments, pharmacy based therapeutic drug, monitoring, promote the cost-effective use of drugs.

Pharmaceutical care focuses the attitudes, behaviors, commitments, concerns, ethics, functions. know ledge, responsibilities and skills, of the pharmacists in the provision of drug therapy outcomes toward "patient health "and" quality of life". This definition recognize the pharmacist as a "health care provider" who can actively participate in "illness prevention "and" health promotion" in collaboration with patients, physicians, nurses and this begs several questions.

We urge you to seize the opportunity to discuss these issues and to exchange best practice with your colleagues and experiences, ideas among participants. This will expose participants to wide range of international experiences and materials.

This Conference is held on the anniversary of the original foundation of the Mongolian Empiric 1200. Those will be a large number of different activities, celebrating and commemorative the event. Those activities include tours to go to the glorious Chinggis Khan's memorial as well as the former capital of the Great Imperial - Karkorum. This will be a most magnificent and special experience for the participants.

So we hope you will be able to come and join as. It is an event not be missed.



Greetings

Dear Colleagues,

I take the great pleasure of inviting you to participate in the Second International Conference of Mongolian Traditional Medicine (ICMTM 2006) dedicated to the 800'" Anniversary of the Great Mongolian State and organized by the School of Traditional Medicine. I lealth Sciences University of Mongolia. The Conference will take place in I Ilaanbaatar. the capital city of Mongolia from 13'" to 15'" of September. 2006.

The first ICMTM took place in 2004 and we had distinguished guests from Austria. Germany. France. India and other countries. It was very exiting for Mongolian doctors to join with foreign scholars in this International Conference.

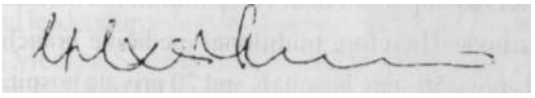
Under the theme '"Traditional Medicine current situation and the future status*', the Second ICMTM will cover different issues related to medicinal plants, theoretical and clinical approach in Mongolian and worldwide traditional medicine. I heartily welcome scientists and medical doctors, who are interested in all field of traditional oriental medicine.

In the present time of integration and globalization, this Conference will give us another hope for the bright future of the Society and Traditional Medicine. Furthermore I believe the Second ICMTM will promote research and build new bridges between many scientists of various countries, between past and the future in the field of Traditional Oriental Medicine for enhancement of health of human beings.

1 sincerely hope this Conference will provide all participants with precious opportunity to deepen their know ledge of oriental medicine and appreciate Mongolian culture and beauty of scenery.

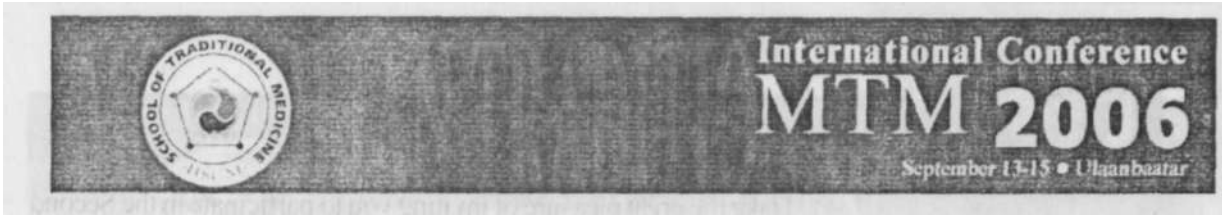
I am looking forward to see you in Ulaanbaatar and I wish you a wonderful staj in Mongolia.

Yours faithfully.



Professor Ts.Lkhagvasuren (D.Sc.)

President
Health Sciences University of Mongolia



Mongolian Traditional Medicine - present status and the future development

There is *no* special nation, which has established, developed and used wholly itself medical theories and treatment methods. But depending on historical stage of nation's development there are definite contributions to medical history h> indi\ idual countries.

The medical tradition of Tibet and Mongolia was imported with Buddhism from India in approximate!) the seventh century AI). At that time Indian \\urvcdic medicine u;is ai its height. In the centuries that followed the exportation of classical Ayurveda Tibet and Mongolia there was a break with the Indian Medical tradition and it was in part lost in its native land. I loweyer it was preserved in Mongolia and Tibet . were it was further enriched with Chinese and Persian contributions. Here it was joined to their pre-Buddhist shaman traditions and continued to enlarge and develop.

Later explanations of the Guid-zhi or "Four Roots" (antra, were written by famous Mongolian and Tibetan doctors. All these books were written in Tibetan because this language became the language of Buddhism and used as much as Latin was used in Europe.

In the beginning of the 20th centurv Mongolia won its independence and a revival period started in Mongolia . The government turned to new science and education. On a base of Traditional Medicine the theon of Occidental medicine started to develop and all areas of modern medicine were established.

Since 199,9 the "State policy on Traditional Medicine development in Mongolia" stalled implementing. the assistance and service of Traditional Medicine were developed rapidly and the usage was increased more and more, and the traditional medicine was occupied a certian position in national health care system.

Nowadays, the Government of Mongolia suppose that Traditional Medicine is the important section of population medicine service and the Government considers as important to develop traditional medicine by combining with western medicine and define the attitude.Therefore traditional medicine branches were opened and engaged in administration sections and above 50 state hospitals and 70 private hospitals and branches were engaged in their activity in traditional medicine direction.

In modern times the government places much attention on tradition, culture and scientific heritage. Therefore in 1989 at the National Medical University of Mongolia the Department of Traditional Medicine was founded. Now it is reorganized into School of Traditional Oriental Medicine. Health Sciences University of Mongolia and is the major institution graduating Oriental medical doctors in Mongolia.

The School of Traditional Medicine. Health Sciences University of Mongolia is the leading training and research specialized center to provide graduate, postgraduate and scientific training programs, foster researches on traditional medicine, treatment facilities and manufacture drugs based on traditional recipies.

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Obtained Doctor of Clinical Pharmacy from Ferris State I Iniversity. Michigan. I ISA. Currently he is Deputy Dean for Academic Affairs at the School of Pharmaceutical Sciences. I Jnh ersitj Sains Malaysia Penang Malaysia. I le is also the President of Asian Conference on Clinical Pharmacy and the clinical Infectious disease, coordinator for Master in Clinical Pharmacy Program and PhD in Clinical Pharmac) Program. Also, he is currently in\ olved in Diabetes Clinic and Menopausal / Andropausal Clinic runs by pharmacists. He is also the coordinator lor Drug and Poison Information Services at National Poison Center. I iniversity Sains Malaysia, a WI10 collaboration center. I le is actively involved in promoting clinical Pharmac) in Asia and recently developing the clinical pharmacy program in Philippines end Indonesia! Ie has been elected as President for many NGO's and Society related to I lealtheare in Malaysia. Actively involved with Malaysia Pharmaceutical Society and other society o\ crseas. 1 lis current research interest included infectious disease, geriatric, pharmacoinfomatic and pharmacoeconomic. I le has presented more than 100 presentations in countries like I!SA. Turk. Japan. Korea. Indonesia. I hailand. Philippines. I long Kong. Taiwan and many other countries.

3. Editorial board: Professor Igor Malov Ml); PhD

Graduated from Irkutsk state medical institute. I >SSR in 1983. Trained in Infectious diseases in Irkutsk state medical institute in 1 983-1985. Obtained PhD degree from Moscow State Medical institute by N.Semachko in 1988.1 laving experience in teaching and research in infectious diseases and leadership role at the Institute of Epidemiology and Microbiology Siberian Branch of Rusian Academy of Medical Science and Irkutsk State Medical University. Russia. Currently, he is working as a Rector oflrkutsk State Medical University of Russia. From 1994 to present, editor-in-chief of Journal *o\'* Infectious Diseases (The Official Publication oflrkutsk State Medical University) and Member of European Society of Clinical Microbiology and Infectiouse Diseases, from 1995 to present. Vice president Irkutsk Regional Society for Infectiouse Diseases Doctors. Since 1998. he has become a Member *oi'* dissertation Council of Institute Epidemiology and Microbiology Siberian Branch of Rusian Academy of Medical Science. From 2003 to present. Investigator Protocoie MF 16709 "Safety and Tolerability of Combination Therapy of interferon alfa-2a followed by Peginterferon alfa-2a with Ribavirin (Ro 209963) in Patients with Chronic 1 lepatitis C"

4. Editorial board: Associate professor Theodore HerzlTulchinsky

Graduated from Faculty of Medicine. University of Toronto as MD. 1961. From 1961 to 1962 -Internship. Montreal Jewish General Hospital; from 1963 to 1966 - Fellow in Cardiology (part-time). University Hospital. Saskatoon. Saskatchewan; from 1965 to 1966 - Resident. Internal Medicine-Cardiology. University Hospital. Saskatoon; from 1966 to 1968 - Department of Epidemiology and Public Health. Yale University. Master of Public Health (MPH). Milbank Memorial Fund Fellowship. Having experience in teaching, research and leadership for public health schools and practice. Currently

he is working in Braun School of Public 1 lealth. Hebrew University, I ladassah. Israel teaching in International Master of Public I lealth program. From 2003 to 2005. Consultant to Soros Foundation re new developing schools of public health in Albania. Macedonia. Moldova. Chelyabinsk Russia. Chairman of'PEF.R review of Varna School of Public Health. Bulgaria. He is reponsible for projects with countries of Countries of Eastern Europe and the former Soviet Union in developing new schools of public health. Consultant to new schools of public health developing in Macedonia. Moldova. Albania and Georgia. Responsible forassistainga nd evaluating new schools of public health in Russia (Tver, Chelyabinsk, Moscow, St Petersburg (.Responsible for organization of conferences on developing new schools of public health, with support from Soros Foundation. Ministry of 1 lealth. Ministry of Foreign Affairs, held in Jerusalem in March 2002. and editor of Proceedings and published in Public Health Reviews. Responsible for organization of Israeli-Palestinian Conference on Micro Nutrient Deficiency Conditions, Notre Dame I lotel. Finnan 2001 and publication of proceedings. In summing up experience of 37 years in public health, he has published with a Russian colleague. *The Mew Public Health: An Introduction for the 21st ('cntuiy.* a textbook of 882 pages for Russian schools of medicine, nursing and other health disciplines.

5. Editorial hoard: Dr. Salik Ram Govind, Ml); **MPH**

Graduated from Fiji School of Medicine in Surgery and Medicine in 1976. Trained as Master of Public 1 lealth in School of Public I lealth and'lropical Medicine. University of Sydney, Australia in 1986. Registered as a Medical Practitioner in the Fiji Medical Council Register in 1976; as a specialist in Community Medicine in the Fiji Medical Council Specialists Register in 1994; and as a Public I lealth Specialist by the American Academy of Tropical Medicine. Michigan. USA in 1986.

1 laving experience in public health, primary and preventive health services. Working at national level invoked active collaboration with UN agencies such as Wl K). IINICEF, UNFPA. UNESCO. UNDP and bilateral donor agencies such as USA1D. AUSAID, and ODAetc. Currently he is working as a Medical Officer, Public I lealth Specialist. World I lealth Organization. Ulaanbaatar. Mongolia. I lis main interesting fields of research are: I lealth Services Organization. Management. Planning and Evaluation, Communicable/Non-Communicable Diseases Prevention and Control. Epidemiology and Health Systems Research. District I lealth Systems Development and Management. Primary I lealth Care Planning. Management and Evaluation. Child I Icalth/Matemal Health. Health Sector **Reform.**

6. Editorial board: Dr William J Picon

Dr. Picon is a clinical psychologist in the Washington D.C. area. Obtained Ph.D degree from University of Maryland. College Park, in 1976. In the U.S.. he divides his time between his private practice and his post at the George Washington University Obesity Management Center. His private practice work is specialized in the treatment of psychological trauma, the psychotherapeutic treatment of obesity and the supervision of mental health professionals. His position at the GWUOMP involves program design and development, the treatment of patients, research and the supervision of staff and interns. He recently spent 18 months in Mongolia, serving as visiting professor to the Department of Psychiatry and Neurology, consulting with UNICEF and volunteering at a local children's center. His research interests and national and international workshops and lectures include traumatic psychological stress, the psychology of obesity and psychosomatic medicine.

7. **Editorial board: Joerg (Gcorg W.) Zoll**

Born in Munich. Germany in 1965. and trained for a different profession first. Graduated from IICM (International Institute for Chinese Medicine) in TCM. in the USA in 1996. Was granted "Diplomate in Acupuncture" by NCCAOM (National Certification Commission of Acupuncture and Oriental Medicine) and received the New Mexico State Board Eicense "Doctor of Oriental Medicine in 1997. Practiced Traditional Chinese Medicine in New Mexico at a drug detoxification center, then in Michigan

at "creative Wellness" 1997 to 1998. Working in Edinburgh. Scotland as Acupuncturist at "The Sal isbury Center" and at the "I lolistic I lealth Centre" 1999. Moving to Mongolia end of 1999. and tirst worked at Institute oflnternational Studies, in I flaanbaatar for one and a hal f years. Alter that, while learning the language, received tutorship and preparation tor the National Mongolian licensing test for Acupuncture by Dr. Oldokh. Received the I .icense for Mongolia in 2002. and starting "(ierelt Car" a private practice for Acupuncture and Oriental medicine, at tirst in Darkhan. In 2003 the clinic was moved to I llaanbaatar. and has been active ever since. In 2005 starting to work on a part-time basis for I lealth Sciences University of Mongolia, at the department oflnternational Relations, under Prof. Narantuya. also work with Prof. Tumurbaatar. Presentations at international conferences: 2004:1 ISl[!]M: Stress and Depression in Traditional Medicine. 2005: Korean Meridian and Acupoint Association, and KOIKA. I llaanbaatar: Brief Introduction into Electro Acupuncture. Give a class for Auricular Therapy for Mongolian health care practitioners. 2002. Tutorships and extracurricular classes with mam different teachers.