

ORAL COMMUNICATION

ORAL SESSION-3

Title POSTPARTUM DEPRESSION : A SURVEY OF THE INCIDENCE AND ASSOCIATED RISK FACTORS AMONG RURAL MALAY WOMEN IN KELANTAN, NORTH EASTERN, MALAYSIA

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Objectives The main objectives of the study were to determine the incidence and associated risk factors of postpartum depression among women in Beris Kubor Besar, a rural area in Bachok district, in Kelantan, a state located in the northeast of Peninsular Malaysia.

Methodology The study was conducted between February and August 1998. A two – stage population survey approach was employed. Firstly, all the women who delivered between the months of February and May 1998 in the catchment area of Beris Kubor Besar Health Center were identified. Stage 1 witnessed the use of the 30 items General Health Questionnaire (GHQ – 30) as the screening instrument at 6 to 8 weeks postpartum. All the potential cases (scoring above 6 on the questionnaire) were later interviewed using the Clinical Interview Schedule (CIS) in stage 2 of the study. Diagnosis of postpartum depression was only made if the women fulfilled required criteria including the ICD – 10 (Tenth edition of the International Classification of Disease – 1992) criteria for depressive episode and the onset of the symptoms was judged to be after the current delivery.

Results 174 women (all Malays) were recruited and 17 of them fulfilled the criteria for postpartum depression giving the incidence rate of 9.8 %. The condition was found to be linked to low income or socioeconomic status, having marital problems (mainly financial in nature) and not breast - feeding.

Conclusions Postpartum depression is indeed a reality in rural Malay postpartum women. Methodological issues limitations and recommendations were discussed.

Title KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) TOWARDS TOBACCO SMOKING AMONG SCHOOL CHILDREN IN KOTA BHARU, MALAYSIA

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Introduction There has been an increased trend among school children to start smoking early. Majority of the smokers began smoking before 18 years of old. School programmes design to prevent tobacco use becomes one of the most effective strategies available to reduce smoking. Before initiating this school programme, a pilot study is needed to know the KAP towards smoking among school children in this community.

Methodology A school based study was conducted in a rural area involving 2 clusters samples involving 8 years old and 13 years old children representing samples of lower and secondary school student. The school children were asked to complete a self-administrated questionnaire that includes question concerning KAP about tobacco smoking. A total score for the questionnaire primary and the secondary school is rated separately for knowledge (0-14), (22-47) attitude (0-5), (18-84) practice (0-8), (8-22) respectively.

Results A total of 187 primary school student and 174 secondary school student participated in the study. They are mainly Malay students (95%) and only 30% of the fathers are working in government sector. The score of primary school student on knowledge (Mean 11.0, SD 1.8), attitude (Mean 3.7, SD 4.0) and practice (Mean 6.7, SD 8.0). The score of secondary school student on knowledge (Mean 41.5, SD 4.7), attitude (Mean 63.8, SD 8.0) and practice (Mean 18.5, SD 2.1).

Conclusion Finding suggests that there are still a proportion of children who have poor knowledge, attitudes and bad practices of smoking. This demonstrates that school based preventive education is still needed to increase the awareness and also prevention of smoking among schoolchildren.

References 1. D Zhang, X Qiu (1993). MMWR. 42(19): 370-378. 2. Mostafa A.A. et. al. (1988). Ann Saudi Med.18(3): 212-216.

Title APPLICATION OF RANDOM AMPLIFIED POLYMORPHIC DNA ANALYSIS TO DIFFERENTIATE STRAINS OF *Vibrio vulnificus*

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Abstract A random amplified polymorphic DNA (RAPD) fingerprinting method has been developed to differentiate *Vibrio vulnificus* strains isolated. Twenty-nine strains isolated from cockles and twenty-one strains isolated from shrimps were analyzed. A total of 10 primers were screened with *Vibrio vulnificus* isolates to identify the capability of recognizing DNA polymorphism and three primers were selected. Primer GEN 1-50-01 and GEN 1-50-08 produced polymorphism in most strains tested, with the band sizes ranging from 10.0 to 0.25 kb, while primer GEN 1-50-09 produced polymorphism in 41 strains and the band sizes ranging from 6.0 to 0.25 kb. The dendrogram analysis was also performed to illustrate the result.

Title ACTUAL EXPERIENCE IN THE IMPLEMENTATION OF CVD RISK FACTOR EDUCATION PACKAGE IN RAUB, PAHANG

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Introduction Cardiovascular disease (CVD) is the number one cause of death as reported in hospitals in Malaysia. Modified risk factors related to CVD can be detected early and intervened to prevent the early onset of CVD.

Objective It is the objective of this study to screen the 'healthy' adults in the community between the ages of 30 to 65 years based on CVD risk factors and to intervene early before the onset of CVD. The local resources and manpower are trained and utilized to initiate the education of the community.

Methodology A total of 1003 adults 30 years and above were screened for CVD risk factors in the district of Raub, Pahang. Risk factors namely over weight, hypertension both systolic and diastolic, smoking habits, impaired glucose tolerance (IGT), physical inactivity, stress, hyperlipidaemia and high dietary fat, salt and sugar were obtained. Only 615 subjects were included in the CVD risk factor intervention study based on the following criteria namely age, 30-65 years, no pharmacological treatments, no known diagnosis of CVD and with at least one to not more than two risk factors. An education package was prepared for each of the risk factors. Each package includes pamphlets, posters, wall charts, guided manuals for local trainers, and videotapes. Seven packages namely healthy eating, obesity, GTT, hypertension, stress, exercise, and smoking are prepared by a team of researchers. Videotapes on cooking of modified recipes for various disease conditions like diabetes, hypertension and obesity were prepared professionally by a dietician and Wayang Tinggi Productions. Initially a total of 15 local researchers (RAs) with at least secondary school qualifications were interviewed and employed to conduct the intervention programme. These RAs are trained in a five day workshop followed by at least three consecutive sessions with the main researchers to ensure that they understand the package and the implementation of the CVD package. One of the three mukims in Raub namely Mukim Batu Talam was selected as the study population whereby the other two mukims Ulu Dong and Dong which are situated about 60 km away are the control population. This is to avoid contamination of information. All the 227 subjects for the intervention study were notified in person to assemble at the community hall in Felda Tersang in Mukim Batu Talam in Sept 1999. Those living far away were picked up by transport. A period of 10 days used to conduct the intervention programme.

Result Only 133 out of 224 selected respondents came inspite of all the advocacy. A questionnaire was given individually to respondents who failed to attend the intervention programme. The objective of the questionnaire is to obtain reasons of noncompliance. The reasons given were that they have moved, no incentives, too much talks and lectures since they have received health education message from MOH, felt that they are too old to attend, not feeling well on that day and have gone back to their respective kampungs. The positives aspects of the intervention programme include training opportunities for the local RAs and the ability of the local RAs to conduct the education on CVD risk factor intervention. They did a very good job in explaining and giving local examples that could be easily understood by the respondents.

Conclusion This study justifies our original objective of a community based intervention study and early intervention of CVD. Concurrently, the community requested the researchers to conduct training and workshops to upgrade them utilizing their resources. One of the shortcomings of the intervention was that the respondents were given too much information in a short session. Most of the respondents above 40 years old need glasses to read the pamphlets. However, this was remedied by three monthly monitoring. The detail outcome of the intervention package will be given in the next paper.

Title PATTERN OF GASTRIC CARCINOMA IN KELANTAN, MALAYSIA

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Introduction Environmental influences affect the incidence of gastric carcinoma and there is a strong association between *Helicobacter pylori* and gastric carcinoma. *Helicobacter pylori* – associated gastric carcinoma is generally more common in the antrum/body and is of the intestinal histological type.

Objective To determine the pattern of gastric carcinoma in Kelantan, an area with an unusually low prevalence of *H. pylori* infection.

Methodology Pathology records of gastric carcinoma diagnosed at our institution between 1995 and 1999 were retrieved and studied with reference to demographic characteristics, tumour site and histological type.

Results There were 23 cases in total. The median age was 60 years (range 49-86 years). The male to female ratio was 4.8:1. Eighteen patients were Malay and 5 were Chinese. The commonest location of the tumour was the cardia/gastro-oesophageal junction (61%, 14/23 patients) while 17% (4/23) and 22% (5/23) were found in the antrum and body respectively. All tumours were adenocarcinomas; 69.6% (16/23) of them were of the intestinal type, 21.7% (5/23) of the diffuse type and 2 cases of the mixed type.

Conclusion No firm inferences on the local incidence of gastric carcinoma can be drawn because the data was collected from a single institution. Notwithstanding, the frequency of gastric carcinoma is exceptionally low and the Chinese were over-represented. The higher frequency of tumour in the cardia/gastro-oesophageal junction as compared to that of the antrum/body is in sharp contrast to most other series. This reaffirms the notion that *Helicobacter pylori* infection is a causative agent for non-cardia gastric carcinomas.

Title AN APPRAISAL OF THE EFFECT OF PALM OIL ON THE POSTPRANDIAL LIPID RESPONSE

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Abstract Palm oil is a major edible oil in the world and its nutritional and health attributes have been highlighted in many scientific studies. Nevertheless, its cholesterolemic effects continue to evoke interest. The response of plasma lipoproteins during absorption of dietary fats have gathered increasing interest due to the fact that man by eating regular meals, spends most of the time in the post prandial state. Elevations of postprandial triacylglycerol rich plasma lipoproteins and suppression of HDL-cholesterol concentrations have been suggested to be potentially atherogenic. Whether these have any relevance for palm oil is the subject of inquiry in this presentation and with this objective a number of published studies are reviewed.

The post prandial responses of plasma lipids/lipoproteins to diets rich in rapeseed oil, sunflower oil or palm oil, were compared in human subjects. Fasting and postprandial blood samples were analysed for triacylglycerol, free fatty acids and the lipoproteins after appropriate test meals.

There were no statistically significant differences in plasma lipid/lipoprotein responses after the consumption of diets containing rapeseed, sunflower or palm oils. The overall plasma fatty acid composition was not significantly different between the groups.

The results indicate that test meals containing rapeseed, sunflower or palm oil produce similar postprandial responses of plasma lipids/lipoproteins. The different fatty acid composition of the oils used show no influence on the measured postprandial responses. The similar fatty acid profiles during the post prandial period indicate that neither discrimination in the absorption nor any preferential clearing of specific fatty acids took place.

These findings once again reaffirm that diets rich in palm oil do not differ from sunflower and rapeseed oils with regard to acute effects on plasma lipids/ lipoproteins, and that its effects are comparable to the other unsaturated edible oils. The consumption of palm oil as a source of dietary fat is not atherogenic nor does it increase the risk for coronary artery disease when consumed in realistic amounts as part of a healthy diet.

Title UNDERSTANDING OF RADIATION IN MEDICINE AMONG USM MEDICAL STUDENTS

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Abstract The aim of this paper is to investigate whether the basic concept about radiation in medicine is correctly understood by our medical students. Using a questionnaire we have asked the fourth and the fifth year medical students (n=139) regarding the general knowledge of radiation, application of radiation in imaging and radiation protection. Sixty-three percent of the students are not sure about various types of radiation. Seventy-eight percent could not get all the answers correct in basic principles of radiation protection. Eighty-nine percent of the students did not understand fully the interaction of radiation during chest x-ray and only one student could answer correctly basic question related to nuclear imaging. Overall there is not much difference in the performance between the fourth and final year students in answering the questions. Sixty percent of the students agreed that it is necessary to have a formal lecture in application of radiation in medicine. Almost all students agreed that they should know about radiation protection. In conclusion, the results of this questionnaire indicated that basic knowledge about radiation in medicine and protection was not adequate. Since radiation is widely used in hospital for imaging and therapy postgraduate education on radiation for medical doctors is strongly recommended.

Title THREE-YEAR EXPERIENCE IN PROVIDING MAMMOGRAPHIC QUALITY CONTROL SERVICES

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Introduction Pertaining to the safe use of mammographic x-ray machine, the Ministry of Health (MOH) has required that: 1) a newly installed machine must be commissioned before it is put into a clinical use; and 2) the existing clinically use machine must undergo a quality control (QC) test before its licence can be renewed. To fulfill these two requirements, a QC service from MINT is normally sought by suppliers and screening centers. In order for MINT to carry out this task smoothly, a BENNETT MF-150 mammographic x-ray system¹ was acquired in 1997. To ensure services provided are of the international standard, three international expert's services from IAEA have been engaged.

Objective This paper presents our three-year experience in providing mammographic QC services in the country.

Methodology The QC services include testing of beam and image qualities, focal spot size and etc. We brought our own measuring equipments such as PMX-III, RadCal ionization chamber, survey meter and etc. to the centers as those equipments are not available there. We used the IPSM² and ACR³ protocols. Each service, which require the completion of a QC form, took us about 1.5 working days. We ourselves created this form and this form has been approved by MOH.

Results Six machines have been tested through-out the three-year period. Despite slight difference in the specifications of the machines (i.e. our machine does not have stereotactic and magnification facilities), we encountered no major problems in operating the machine. All the machines were found to work satisfactorily.

Conclusion On the assumption that there are about sixty machines through-out the country, this work seems to represent only 10% of the total. We hope that the rest of the screening centers and suppliers will also consult us, so that a complete database of the machine can be prepared. This database perhaps would be of use to the country especially when it comes to the enforcement on the safe use of this machine.

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Title FINGERPRINTING OF EMERGING AND RE-EMERGING BACTERIAL HUMAN PATHOGENS BY CONTEMPORARY MOLECULAR TECHNIQUES

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Abstract Molecular typing of microorganisms has made great strides in the last decade, and many food microbiology laboratories have become more knowledgeable and better equipped to carry these new molecular techniques. Molecular fingerprinting procedures can be broadly defined as methods used to differentiate or identify bacteria, based on the composition of biological molecules such as proteins, fatty acids, carbohydrates, etc., or nucleic acids. The later is also defined as genotyping. The advantages of genotyping, which involves direct DNA-based analysis of chromosomal or extrachromosomal (e.g., plasmid) genetic material lies in its increased discriminatory power, i.e., in its ability to distinguish between two closely related strains. In addition, analytical strategies for the genotyping methods are similar and can be applied to DNA of any source and it allows for statistical data analysis, and is amendable to automation.

Title DISTINGUISHING *SALMONELLA* BLOCKLEY ISOLATES BY repetitive element PCR and restriction enzyme analysis using pulsed field gel electrophoresis (PFGE)

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Abstract *Salmonella* are now recognized as very important agents of foodborne infection all over the world. The typing of *Salmonella* spp. is of considerable importance in surveillance of community foodborne outbreaks of *Salmonellosis* and as a research tools. In this study, we used enterobacterial repetitive element-polymerase chain reaction (ERIC-PCR) and pulsed-field gel electrophoresis (PFGE) to differentiate among *Salmonella blockley* isolates. Two primers ERIC1R and ERIC2 were utilized in the PCR analysis. ERIC-PCR produced simple fingerprints for the isolates, which discriminated them into ten ERIC patterns. PFGE with restriction enzyme *Xba* I produced complex fingerprints and could discriminate all the isolates into 20 PFGE patterns. The dendrograms constructed from the results of ERIC and PFGE patterns shows that there was no agreement in how the different fingerprint data sets obtained by ERIC PCR and PFGE grouped the isolates. Our results demonstrate that both ERIC and PFGE fingerprinting methods are suitable tools for a fast and reliable molecular typing of *S. blockley*. In comparison, the PFGE provide a higher discriminating power than ERIC PCR.

Title ENUMERATION OF APOPTOSIS-INDUCING POTENTIAL IN HUMAN LEUKAEMIA CELLS BY GONIOTHALAMIN

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Introduction Goniiothalamine is among some promising natural product-derived compounds, that are currently being researched for chemotherapeutic potentials. This compound is a styrylpyrone derivative isolated from local plants of the *Goniiothalamus* spp (Jewers, *et al.*, 1972), which was found to be lethal to brine shrimps (McLaughlin, *et al.*, 1991), antiproliferative and cytotoxic against various human tumour cell lines (Azimahtol, *et al.*, 1998; Ali, *et al.*, 1997). Azimahtol HLP, Stanslas J (1998a; 1998b) further described the compound's preliminary *in vivo* effects.

Objectives In the present study, cytotoxicity and apoptosis-inducing potential of goniiothalamine were evaluated in a non-solid tumour of human T-cell lymphoblastic leukaemia cells (CEM-SS), using various conventional methods.

Methodology Cytotoxicity of goniiothalamine was assessed using MTT assay, while anti-proliferative effects were analysed using trypan-blue exclusion method. Morphological analyses were enumerated in both life and terminated cultures using Wright's and H&E staining methods. Fluorescence-microscopy was carried out by rapid nucleoprotein dyes intercalation, using acridine orange(AO) and propidium iodide (PI). Transmission electron microscopy (TEM) and agarose gel electrophoresis were used to confirm the apoptotic morphologies.

Results Goniiothalamine was found to be cytotoxic with an average IC₅₀ of 5.35 and 4.55 µM after 24 and 72h treatments respectively. Dose-response and time-course anti-proliferative assays, have demonstrated over 50 % of the cells unable to proliferate at day 5 after treatment with the latter IC₅₀ concentration. All cells were however found to be completely dead after a higher dose (13.5 µM) treatment. IC₅₀-treated cells stained with Wright's and H&E stains displayed apoptosis morphologies. Time-course fluorescence microscopy results revealed an apoptotic mode of cell death to be induced as early as 2h IC₅₀ post treatment, with up to 66% apoptotic-proportion of the total cells detected at 72 hours. Ultrathin TEM analysis and conventional agarose gel electrophoresis of goniiothalamine time-course treated cells, have all proven to show and display classically defined apoptotic morphologies and internucleosomal DNA cleavage respectively.

Conclusions This study provides enough evidence for goniiothalamine induced-apoptosis in CEM-SS cells, envisaging dues to which further mechanistic studies will lead to a better understanding of its potential as a chemotherapeutic agent. A more recent study carried out by some members of this study group using another leukaemia cell line, Jurkat cells, have now described the goniiothalamine induction of apoptosis to be through the activation of caspases 3 and 7 (Inayat-Hussein, *et al.*, 1999).

Title ABSORBED DOSE DETERMINATION USING IAEA, HPA, NCRP, NACP AND ICRU PROTOCOLS FOR 1.25 MeV GAMMA RAY AND 6 MV, 10 MV X-RAYS

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Introduction In 1987, IAEA¹ has recommended a method for absorbed dose determination for high energy photon dosimetry. Prior to this recommendation, several methods have been reported², such as HPA in 1983, NCRP in 1981, NACP in 1980 and ICRU in 1973. These five methods (protocols) should yield similar value in absorbed dose for a given radiation quality and reference condition.

Objectives To determine absorbed dose using IAEA, HPA, NCRP, NACP and ICRU protocols for 1.25 MeV gamma ray and 6 MV, 10 MV x-rays.

Methodology Gamma ray of 1.25 MeV was obtained from a Co-60 source of a teletherapy unit Eldorado-8. X-rays of 6 MV and 10 MV were obtained from a Linac Mevatron KD2. Absorbed dose was measured with ionisation chambers NE 2561 (#267), NE 2571 (#1028), NE 2581 (#334), using the IAEA standard phantom of 30 x 30 x 30 cm³. for the three radiation qualities, field size (FS) and source to phantom surface distance (SSD) were set at equal geometry, respectively as 10 x 10 cm² and 100 cm. Source to chamber distance (SCD) was set at 110 cm for 10 MV x-ray, and 105 cm for other radiations.

Results For one radiation quality, one particular ionisation chamber will yield a reading. If this reading was to be substituted in the five protocol formulas, five absorbed dose values will be obtained. The four values calculated from HPA, NCRP, NACP and ICRU protocols were compared with the IAEA value. Percentage deviation D were obtained. If D₁, D₂ and D₃ are the largest deviation in absorbed dose for 1.25 MeV gamma ray and 6 MV, 10 MV x-rays respectively, the corresponding results obtained are D₁ = -0.94%, D₂ = 2.11% and D₃ = 2.35%. If the acceptable IAEA³ limit of $\pm 3\%$ is to be used, all these deviations can be regarded as small and hence be accepted.

Conclusions Early HPA, NCRP, NACP and ICRU protocols have not yielded significant difference in absorbed dose value when compared with the recent IAEA protocol. Therefore, not surprisingly, the four protocols are still being used in western countries.

References 1. IAEA, 1997. Absorbed dose determination in photon and electron beams - an international code of practice, TRS No. 277, Vienna. 2. Almond, PR 1986. A comparison of national and international mega voltage calibration protocols: In radiation dosimetry physical and biological aspects. Premium Press, New York. pp: 73-86. 3. IAEA, 1991, SSDL Newsletter, No. 30, Vienna. pp:3-17.

Title PRENATAL DIAGNOSIS OF α^0 -THALASSEMIA TYPE --SEA DELETION BY PCR-BASED TECHNIQUE

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Abstract Thalassaemia screening and genetic counselling are essential for the prevention of severe thalassaemia, i.e. Hb Bart's hydrops fetalis and homozygous β^0 -thalassaemia. Hb Bart's hydrops fetalis results from the coinheritance of two α^0 -thalassaemia determinants and is associated with complete absence of α -globin chain synthesis. Infants with Hb Bart's hydrops fetalis usually die in utero or soon after birth. We used a PCR-based technique to detect α^0 -thalassaemia type --SEA deletion in 24 pregnant women at 9-10 weeks of gestation with previous history of pregnancy with Hb Bart's hydrops fetalis. From 24 chorionic villi samples, 15 (62%) samples showed Hb Bart's hydrops fetalis, 5 (21%) samples showed heterozygous α -thalassaemia and 4 (17%) samples showed normal α globin genes. This approach can be used to detect Hb Bart's hydrops fetalis at an early stage and termination of pregnancy can be recommended since the infant is incompatible with life and to prevent complications during pregnancy such as pre-eclampsia, antepartum hemorrhage and postpartum hemorrhage.

Title ACCEPTANCE TESTING FOR A NEWLY ACQUIRED THERAPY LEVEL IONISATION CHAMBER

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Introduction We have recently acquired a new ionisation chamber for the purpose of low, medium and high photon energy dosimetry. This chamber is to act as a working standard in our Secondary Standard Dosimetry Laboratory (SSDL). Before this chamber is put into routine use, it is important to show that the chamber performs correctly following its receipt. An ionisation chamber which does not perform correctly at this initial stage has a high likelihood of never doing so.

Objective To carry out acceptance testing for a newly acquired ionisation chamber.

Methodology The newly acquired ionisation chamber is of type 0.6 cc NE 2571A (#3002) graphite guarded Stem¹. It came with a calibration certificate N0:C71 3002 2799 issued by the manufacturer. This certificate gives the values of sensitivity S_i and conversion factor F_i where i = 1 to 4, which corresponds respectively to the four x-ray qualities of 50, 100, 180 and 250 kV. From these S_i and F_i values, the calculated exposure calibration factors N_{x-e-i} values. The acquired chamber was connected to PTW-UNIDOS 1005 (#50013) electrometer. A reference standard dosimeter comprises chamber NE 2561 (#267) plus electrometer NE 2560 (#151) was used. Similar calibration conditions as stated in the certificate were followed. A constant potential x-ray machine of type Philips MG 320 was used to provide the four radiation qualities. Substitution method² was used to determine the N_{x-e-i}.

Results and The percentage deviations Di calculated from N_{x-c-i} and N_{x-e-i} values were obtained. Results

Discussion show that D₁, D₂, D₃ and D₄ are respectively equal to 0.67%, 1.03%, -0.70% and -0.36%. If the acceptable IAEA³ limit of $\pm 3\%$ is to be used, all these deviations can be regarded as small and can be accepted.

Conclusion The performance of the newly acquired chamber meets the performance specification quoted by the manufacturer. This means that the chamber has passed the acceptance testing. This also means that the chamber can now be used as a routine working standard.

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Title CAN CONTACT LENS PROTECT YOUR EYES FROM ULTRAVIOLET RADIATION?

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Abstract The need for ultraviolet protection in the natural environment has become a popular topic, particularly when considered in conjunction with the depleting ozone layer and ozone holes. This has led to the production of contact lens with ultraviolet protection. The ultraviolet light transmission was measured for 6 ultraviolet absorbing hydrogel contact lenses that were available in the clinic. The measurement was conducted using Shimadzu dual beam spectrophotometer. It was found that Precision UV provides ultraviolet protection up to 380nm, whereas Acuvue 2 and Survue 2 provide up to 360nm only. Omega, Encore UV and Lunelle UV only manage to protect up to 355nm. However, the transmission of Lunelle UV is the highest among all contact lenses tested, which is 17%. Our results show that Precision UV provide the best ultraviolet protection characteristics and therefore can protect the eyes from ultraviolet radiation.

Title THYROID DISEASE IN MONGOLIA

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Introduction There was no epidemiologic survey of thyroid disorders and IDD prevalence until 1990s. The geographic and climatic condition of Mongolia has distinguished specificity from other countries. Geographically, Mongolia is a landlocked country with continental climate. Thyroid disorders occupy more than 80% of endocrinopathy. Among them, Graves' disease has the highest occurrence. Young people, between the age of 20 and 40, are more afflicted by thyroid disease and are brought into situation to lose their employability. Due to Mongolian Government paid great attention to this matter, the IDD prevalence survey had finished in 1998 through whole nation. And now the national programme against IDD has been implementing. Nowadays there are more than 1 billion people living in iodine deficiency zone of 118 countries in the world. And 600 millions of them have endemic goiter, more than 40 millions with mental retardation caused by iodine deficiency of which the 11 millions have cretinism.

Objective To determine morbidity of thyroid disease as well as the prevailing disorder among them including what age and sex thyroid disorders occur. To calculate the percent of thyroid enlargement occurrence. A question of creating a system to prevent and control thyroid disease morbidity is coming up due to screening IDD in Mongolia and determining its prevalence including specificity of geographic zones.

Methodology The survey involved 1766 people with different disorders between the age of 15 and 80. The morbidity of thyroid disease based on questionnaire, clinical picture, result of analysis in laboratory plus hormonal and immune testings. The epidemiologic survey of IDD involved 48,868 people from 18 aimags and 4 cities. Among these people, there were 10,900 women of childbearing age and 37,968 children. Endemic goiter was screening by palpating examination and we divided the patients with thyroid enlargement into 3 degrees. Iodine estimation in urine was determined and it's considered when it is lower than 50 mcg/l.

Results Among the people with thyroid disorder, 89% were women and 11% were men. It shows that thyroid disorders occur more with women. As for the age mostly young people between the age of 30-34 suffer from thyroid disorders. Graves' disease has highest occurrence compare to the other thyroid disorders as we see followings: Graves' disease 84%, Hypothyroidism 2.5%, Subacute thyroiditis 0.75, Hashimoto's thyroiditis 0.4%. To see the function of thyroid gland during its disorders there were hyperthyroidism 83%, hypothyroidism 3% and euthyroidism was 14%. The I and II degree of thyroid enlargement occupy 91% and it shows that thyroid enlargement is common during its disorders. In our country $29.2 \pm 0.04\%$ in every 100 person, $28 \pm 0.23\%$ in pupils between the age of 7 and 14 have endemic goiter. The ratio between the boys and girls with endemic goiter is 1.5:1, between the inhabitants of cities and rural areas is 1:1.1. Geographically, prevalence of IDD was more ($35.40 \pm 0.27\%$) in the mountainous area of Khangai and Khentii but it was in Gobi ($12.60 \pm 0.37\%$). Ninety-three percent at the children who have thyroid enlargement had I degree and 7% had II degree of thyroid enlargement ($p < 0.05$). To see the function of thyroid gland of children with IDD 98.5% of them had euthyroidism and hypothyroidism. Only 1% these children had hypothyroidism.

Conclusion Thyroid disorders occupies the highest percent among blood gland disorders. Among them Graves' disease has highest occurrence. Thyroid disease occurred more with women and young people. Thyroid enlargement is combined with most of the thyroid disorders. The prevalence of IDD is comparably higher in Mongolia than the other countries and it's more in mountainous zone of Khangai and Khentii, less in Gobi.