ORAL PRESENTATIONS

Oral 1-1

AEGELINE (*AEGLE MARMELOS*) AS A DUAL AGONIST FOR THE TREATMENT OF TYPE II DIABETES MELLITUS

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Type II Diabetes Mellitus is a progressive disease and medication depends on various targets. The current medication focuses on the PEROXISOME PROLIFERATOR-ACTIVATED RECEPTORS (PPARs), which are ligand-activated transcription factors belonging to the NR1 subfamily of nuclear receptors. The work was to identify the mode of action of the natural lead Aegeline from the leaves of AEGLE MARMELOS and to compare the efficacy of the compound with the synthetic available drugs such as Pioglitazone, Rosiglitazone and Fenofibrate using as reference agonists in the PPAR γ and PPAR α docking assays. The drugs which were docked in the Ligand Binding Domain (LBD) of PPAR Receptors formed H-Bond interactions which have been postulated to be important for the induction of agonistic activity. The lack of H-bonding interaction with the protein provides the structural basis for their partial agonism. Aegeline adopted a distinct binding mode in the LBD of the receptor and had no H-bonding interactions with PPAR γ in the conserved H-Bonding residues. In PPAR α, Aegeline was found to be present in the LBD of the Receptor and formed H- Bonding with both Tyr334 and Ala333 as that of the Fenofibrate, a synthetic drug. Thus the lead Aegeline was found to be an agonist of PPAR α and a partial agonist of PPAR γ due to the lack of conserved H-bonding and thus proving to be both antilipidemic and antihyperglycemic in their action. The distance of Hydrogen bond was found to be approximately the same as that of the synthetic drugs. Since it is a natural lead the side effects of the synthetic drugs can be reduced. The future work can also be extended to test the compound for reducing the other complications caused by Type II Diabetes.This was also supported by wet lab studies.

Oral 1-2

INVESTIGATION OF DEVELOPMENTAL TOXICITY AND TERATOGENICITY OF ANTIEMETICS ON RAT EMBRYOS CULTURED *IN VITRO*

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Nausea and vomiting of pregnancy, affects approximately 80% of pregnant women and generally resolves by the 20th week of gestation. The objective of the study was to compare the toxicity and teratogeniticity of metoclopramide and dimenhydrinate, antiemetic drugs. 9.5 day rat embryos were dissected and cultured for 48 hours. Whole rat serum was used as a culture medium for the control group while different concentrations of metoclopramide (10-50 μg/ml) and dimenhydrinate (2,5-20μg/ml) were added to serum for the experimental groups. At least 10 embryos were used for each concentration. Dose-dependent effects of antiemetics on embryonic developmental parameters such as total morphological score, yolk sac diameter, crown-rump lenght and somit number were compared using morphological method. Embryos were evaluated for the presence of any malformations. Compared with the controls, metoclopramide caused statistically significant dose-dependent growth retardation in all developmental parameters equal to and higher than 30μg/ml. Although there were some abnormalities observed, none of them was at the incidence of statistically significant level. Dose-dependent growth retardation was also observed in the presence of dimenhydrinate, again in all parameters at concentrations equal to and higher than 5μg/ml. This antiemetic also caused haematoma, microcephaly, abnormal tail torsion, oedema and middle brain deformity at significant level. In this study, dose-dependent developmental toxicity of two different antiemetics on rat embryos was determined. Dimenhydrinate was found more toxic and teratogenic on developing rat embryos in culture than metoclopramide.

This project was supported by Scientific Research Project Commission of Selcuk University.

Oral 1-3

BRAINSTEM AUDITORY EVOKED RESPONSE IN CHILDREN WITH VARYING DEGREE OF SPEECH DEFECT

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BACKGROUND: Many disorders can result in speech defect in early childhood. It could be associated with mentally handicapped children with infections like otitis media and meningitis. Autism is emerging as one of the leading causes of speech problem and many workers have reported varying results of brainstem auditory evoked response. The Brainstem auditory response is a sensitive electrophysiological method by which the functional integrity of auditory pathway can be tested in children presenting with a speech defect.
METHODS: The present study was conducted in the Department of clinical neurophysiology, College of Medicine, King Saud University. A total of 152 children from the age group of 1-8 years of both sexes were selected for short and middle latency evoked response test. The data from the children with a speech defect were compared to for an age and gender matched control group. A detailed clinical history and neurological examination was performed.
RESULTS: Three different patterns of responses were observed: in group 1, 40 children had no response even at 80 dB. In group 2, 28 children had either cochlear or retro-cochlear involvement, and in group 3, 54 children had normal absolute, and inter peal latency was seen. However, the amplitude of wave 1, 3 and 5 where individually or collectively, had a significantly high amplitude.
CONCLUSIONS: Out of all children, the main group had only high amplitude. In wave i,ii,iii, and in wave 5 had normal or small amplitude. This main group of children [3 group] needed early detection and early speech therapy for their normal development of speech.

Oral 1-4

ASSESSMENT OF IRRITABLE BOWEL SYNDROME SYMPTOMS AMONG SECONDARY SCHOOL MALE STUDENTS IN AL-JOUF PROVINCE, SAUDI ARABIA

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BACKGROUND: Irritable Bowel Syndrome (IBM), a highly prevalent chronic disorder, places significant burden on the health service and the individual. There are no clear diagnostic markers for this syndrome, thus its diagnosis is based on clinical presentation.
OBJECTIVE: To assess the proportions of symptoms suggestive of IBS (Symptom-based diagnosis of IBS) frequency among secondary school male students in Al-Jouf province, using different standard definitions (Rome and Manning criteria).
METHODS: A community-based, cross-sectional study was conducted by self-administered questionnaire. It contained demographic characters of the students and slightly modified questions from Manning and Rome criteria about the symptoms of IBS. The study populations (2025) were randomly selected out of a total of 3250 from 13 Secondary schools for boys in Al-Jouf province, Northern region of Saudi Arabia during the period April - May 2009. Statistical data analysis was done with the aid of SPSS version 11.5 for windows. A scoring system was used to score the proportions of the symptoms and cluster of symptoms of IBS and correlation of these symptoms with demographic data.
RESULT: Questionnaires were returned by 1747 of 2025 eligible subjects (86.36% response rate). The prevalence of the IBS among male students was 9.2% (Rome II criteria) and 8.9% (Manning criteria) aged between 15-17 years. However, the main symptom suggestive of IBS was abdominal pain or discomfort (37.9%). A statistical significance was found between recurrent abdominal pain and student school attendance and study performance ($P<0.05$). Interestingly there were a statistically significant associations between family size and clusters of the symptoms suggestive of IBS ($df=8, X2=30.290$ and $p<0.001$).
CONCLUSIONS: The present study shows that IBS as diagnosed by the Rome II criteria had high prevalence among this study population. However, these symptoms had a significant impact on school performance of secondary school students. These findings are useful in interpreting epidemiological and clinical studies of IBS.

ORAL PRESENTATIONS

Oral 1-5

β-LAPACHONE ACCELERATES THE RECOVERY OF BURN-WOUNDED SKIN

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β-lapachone is a quinine of lapachol extracted from the bark of lapacho tree. Recent findings demonstrated that punched skin wounds of mice healed faster in β-lapachone treated group than in the control group (Kung et al., 2008). We used C57BL/6 mice to investigate the effects of β-lapachone on burn-wounded skin created by a 100^{o}C iron stick to burn the back of the mouse for 60 seconds. *In vivo* experiments revealed that wounds treated with 100μM β-lapachone recovered faster than those treated with control ointment. On the third day from burning, the area of β-lapachone treated-wound was 30% smaller than wound treated with control ointment. H&E and immunohistochemistry staining showed that wounds treated with ointment containing 100μM β-lapachone recovered faster in its epidermis, dermis, and connective tissues, and more macrophages appeared than those treated with control ointment. RAW264.7 cell line was used as a model for scrutinizing the effect of β-lapachone on proliferation and secretion of growth factors of macrophages. By MTT assay, the proliferation ratio of RAW264.7 cells raised to 127.9%, after being treated with 0.5μM β-lapachone for 24 hours. The results of time course in 24 hours revealed that the proliferation ratio of 0.5μM β-lapachone-treated RAW264.7 cells raised 105%~177%. Among five different treatments (10ng/ml TNF-α, 0.5μM β-lapachone, 10ng/ml TNF-α + 0.5μM β-lapachone, or 5min 10ng/ml TNF-α pretreatment + 0.5μM β-lapachone), the secretion of EGF and VEGF by macrophages was the highest in cultures treated with "5min 10ng/ml TNF-α pretreatment + 0.5μM β-lapachone" and "0.5μM β-lapachone alone" respectively. Therefore we conclude that (1) β-lapachone plays an important role in accelerating the burned wound healing process and (2) β-lapachone has the ability to enhance EGF and VEGF secretion.

Oral 1-6

THE EFFECTS OF BACK PACK LOAD IN SCHOOL CHILDREN AND WAY TO PREVENT BACK PAIN FROM KID'S BACKPACK

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OBJECTIVE: A logical first step and the purpose of this study is to find the incidence of back pain in school children due to an increase in back pack load and also to find out answers for this problem.
METHODOLOGY: The primary data needed for the project was collected from school children by checking their general physique and comparing them with the load and model of the bags and by using questionnaires. The sample consisted of 501 children, irrespective of sex ranging in age from 9 to 12 years in grades 4, 5 and 6 from matriculation Schools in Coimbatore, Tamilnadu. A set of information was delivered to each classroom teacher participating in the study. Teachers were instructed to place the scale on a flat surface in the classroom and to set the scale to zero. After completing the questionnaires (written section), the children were individually weighted with and without their bags. Values were documented on the questionnaire. Percentage of body weight was calculated by dividing the weight of the bag by the child's weight.
RESULTS: 15% of respondents who used hip belts reported no pain and discomfort. 62% of the children in our sample use a standard two-strap shoulder bag without hip belt and reported back pain.
CONCLUSION: This study supports the concern raised by the parents and professionals. Higher incidence of back pain was reported in the samples carrying back pack loads greater than 15% of the body weight. Additionally, longitudinal studies with children as subjects are required to elucidate the long term effects of back pack use. We have given the knowledge to parents and students as to how they have to load and wear the backpack properly to avoid back pain.

Oral 1-7

THE ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES OF RED SEAWEED, *GRACILARIA FISHERI* EXTRACTS

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Numerous studies revealed that compounds from seaweed possess antimicrobial and antioxidant activities. Therefore, the aim of the study was to explore the antimicrobial and antioxidant activities of the solvents extracts from red seaweed, *Gracilaria fisheri*. The organic solvents including ethanol, methanol, chloroform and hexane were used to extract *G. fisheri*. The antibacterial activities of all crude extracts were evaluated against the virulence strains of gram-negative bacteria *Vibrio harveyi* using the disc diffusion method and the minimal inhibitory concentrations of all extracts were determined. The antioxidant activity of *G. fisheri* extracts was evaluated using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay, compared with the activity of curcumin and vitamin C in term of 50% inhibition concentration (IC_{50}). Brine shrimp bioassay was performed to investigate the toxicity of the ethanol extract of *G. fisheri*. By disc diffusion method, all extracts showed active antimicrobial activities against the three strains of *V. harveyi*. The ethanol, methanol and chloroform extracts showed antibacterial activities against *V. harveyi* as good as that of norfloxacin (antibiotic) but better than the hexane extract. The minimal inhibitory concentrations of the four extracts were in the range of 75-200 µg/ml. For DPPH free radical-scavenging test, the ethanol extract showed a better free radical-scavenging activity (IC_{50} 12.14 µg/ml) than those of other solvent extracts. The activity was closed to that of curcumin (IC_{50} 13.39 µg/ml) but higher than vitamin C (IC_{50} 4.83 µg/ml). Brine shrimp bioassay test of the ethanol extract showed the LC50 approximately 4 mg/ml. The results suggested that the ethanol extract of *G. fisheri* was not toxic, exhibited antibacterial activity against *V. harveyi* and could be a potential natural source of antioxidant.

Oral 2-1

STUDY OF CIRCLE OF WILLIS USING MAGNETIC RESONANCE IMAGING

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Anomalies of Circle of Willis play an important role in cerebrovascular accidents especially in cerebral infarction. With increased incidents of hypertension and Diabetes Mellites,cases of cerebral infarction has increased. The Circle of Willis and its anastomosis is of great significance when one of the major arteries supplying the brain becomes occluded. Therefore the diagnosis of intracranial aneurysms and stenosis prior to carotid endarterectomy is important. 50 patients at random who came to the Outpatient department of Radiology and Imaging sciences, Sri Ramachandra Medical College and Research Institute for undergoing Magnetic Resonance Imaging were chosen for this study. The technique used was three dimensional Magnetic resonance angiography. Also Circle of Willis and its branching pattern was studied in 10 brains of human cadavers. Out of fifty cases, thirty cases were found to be normal. Other findings included hypoplasia of anterior cerebral artery, internal carotid artery, posterior cerebral artery and posterior communicating artery. Also stenosis of internal carotid artery and basilar artery were seen. One case showed ectactic change in the basilar artery. Therefore Magnetic Resonance Imaging is the most powerful non-invasive method to demonstrate collateral circulation via basal communicating arteries and to identify hemodynamically relevant anatomic variants of the circle of Willis.

Oral 2-2

PATHOLOGY DOES NOT AFFECT THE LINEAR GROWTH OF FETAL LONG BONES

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INTRODUCTION: The spontaneously aborted fetuses are valid subjects for estimation of normal fetal growth even under pathological conditions (Brenner *et. al*, 1976). Also other studies reveal that the linear growth of the long bones is not significantly effected by the underlying pathology in the fetuses. (Rechards and Anton 1991)
MATERIALS: The present study analyses the relative linear growth and proportionality of the long bones of 50 aborted fetuses, aged between 14 to 39 weeks and 117 live intrauterine fetuses aged between 18 to 40 weeks.
METHODS: The radiographic measurements, physio-anthropometric and ultra sonological measurements of diaphysial length and crown heel length (CHL) are utilized in this project. The data was generated from the radiographs and ultra sonographs of the above 50 dead and 117 live intrauterine fetuses respectively. The second data was generated from the autopsy records of the fetuses of soft tissue examination. In many cases it was found that there is no pathology while others showed some or other problems like placental disorders and some fetuses showed acute pathology like hyaline membrane disease. These cases were compared with those in which the pathology was proved in the postmortem examination.
CONCLUSIONS: In this study it is revealed that the linear growth of the long bones is not significantly affected by the pre-natal pathology. It is also revealed that the proportionate relationship between the linear length of long bones and the crown heel length are stable and predictable. This fact is consistently well utilised clinically by the radiologists and sonologists.

Oral 2-3

PERSONAL FORMALDEHYDE EXPOSURE LEVEL IN THE GROSS ANATOMY DISSECTING ROOM AT COLLEGE OF MEDICINE KING SAUD UNIVERSITY RIYADH

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INTRODUCTION: This study was conducted to correlate the personal formaldehyde (FA) exposure levels of instructors and students with the indoor FA concentrations in gross anatomy laboratory at King Saud University. The personal FA levels of instructors and students are higher than the indoor FA concentration in the gross anatomy laboratory.
MATERIALS AND METHODS: The gross anatomy laboratory at college of medicine, King Saud University Riyadh, was observed for indoor FA concentration and the personal exposure levels of instructors and the medical students during the 4th 10th and 14th weeks of the dissection sessions. All air samples were collected by the diffusive sampling device and analyzed by using high performance liquid chromatography (HPLC).
RESULTS: The personal exposure level of FA was higher than the indoor concentration, and the personal exposure levels of instructors were higher than that of the students. The concentration of FA was also higher in the center of the room than the corners and near the doors.
CONCLUSION: Both the indoor FA concentrations and the degree of personal FA exposure levels are higher near the dissecting table than a point away from it during the gross anatomy laboratory sessions. Thus the instructors and students are exposed to the higher concentration of FA than the general population.

Oral 2-4

DISTRIBUTION OF SYMPATHETIC FIBERS IN THE CUTANEOUS NERVES OF FOREARM: AN IMMUNOHISTOCHEMICAL STUDY IN CADAVERS

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OBJECTIVES: Secondary to peripheral nerve injuries, involvement of sympathetic fibers complications such as Complex Regional Pain Syndrome (CRPS) have been reported. There are no reports available in the distribution of the sympathetic fibers/areas of sensory nerves in the forearm. The present study aim is an attempt to find the distribution of sympathetic fibers in the anterior branch of medial antebrachial cutaneous nerve of forearm (AMACN), lateral antebrachial cutaneous nerve of forearm (LACN) and superficial branch of radial nerve (SBRN) at cubital fossae.
PROCEDURES: We have studied on 17 fresh human cadaveric AMACN, LACN and SRBN samples. Frozen sections of these nerves were processed by immunohistochemical (tyrosine hydroxylase) method for sympathetic fibers.
RESULTS: Sympathetic fibers area (Asym) was found to be more in SBRN when compared to AMACN and LACN. The comparison of the sympathetic index (SI = sympathetic fibers area / total fascicular area of the nerve) between AMACN and LACN (p value < 0.001), AMACN and SBRN (p value < 0.001), LACN and SBRN (p value < 0.001) were statistically significant. Sympathetic index (SI) for SBRN was more when compared to AMACN and LACN. SBRN had maximum percentage (5.16 %) of Asym when compared with LACN and AMACN.
CONCLUSION: Sympathetic fibers area (Asym), sympathetic index (SI) and percentage of sympathetic fibers area (Asym %) were found to be more in SBRN when compared with AMACN and LACN. These results of the study might help to explain sympathetic system-related diseases in the area of distribution of AMACN, LACN and SBRN.

Oral 2-5

ASSESSEMENT OF ANATOMY CURRICULUM FOR FUTURE CLINICIANS

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Curriculum development in medical education is a scholarly process that integrates a content area with educational theory and methodology and evaluates its impact. When curriculum development follows a systematic approach, it easily fulfills criteria for scholarship and provides high-quality evidence of the impact of a faculty member's educational efforts. Faculties are usually content experts, but may not be familiar with medical education organization and educational resources for their work in the basic medical sciences. There is a need to design the Anatomy curriculum to fulfill the requirements of rapidly advancing Basic Medical Sciences. Changes have been made to modify the undergraduate Anatomy curriculum and teaching methods. A number of avoidable deaths are attributed to deficient anatomical knowledge of the residents. Various pre-clinical departments of medical schools periodically revise the curricula, critically examining the teaching methods and making plans for updating the ways and means for enhancement of the quality of Anatomy teaching. With the expansion of biomedical knowledge, the way of treatment changes. Thus the clinicians must update their knowledge and skills. It is also advised that anatomy, physiology, and biochemistry should form the principal components of the syllabus in the preclinical years, but undue emphasis on details is not desirable. The content of anatomy required in the undergraduate curriculum and the best way to impart this knowledge are issues that excite many medical educationists. Keeping in view all these facts of Anatomy course curriculum, we need to determine the adequacy of medical students' preparation in gross anatomy upon their entry to clinical years and to investigate the contribution of academic departments for undergraduate teaching and their plans for an appropriate curriculum development.

Oral 2-6

DOMAIN ANALYSIS IN A CHANGED APPROACH TO TEACHING ANATOMY

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Recent curricular reforms in the teaching of basic sciences in many schools of Medicine, in terms of duration and content, call for changes in the approach of teaching of these subjects, in general, and Anatomy, in particular (Collins JP, 2008). The need for such changes in approach is more relevant in institutions, where the teaching of the basic sciences is restricted to semesters, prior to clinical training. It was felt that such a change could be achieved by influencing the attitude of the learner. An attempt was made to impress the students about the clinical relevance of what is being taught in Anatomy, as a measure to bring in greater involvement of the students in the subject taught and thereby making the preclinical training maximally productive. Preclinical students were taken through selected clinical specialties periodically. Eventually, an 'observership' program was evolved, which exposed students to subspecialties like Cardiology, Gastroenterology, Medical Imaging, Nephrology and Transfusion Medicine. The objective was to impress upon the students the direct relevance of Anatomy in understanding procedures in clinical specialties. Pre-tests and post -tests conducted showed that the students appreciated the program for its content, relevance and the clinical experience. It was observed that the program enhanced learning in the affective domain as well - an attribute which is normally difficult to achieve. The feasibility of conducting such a program within the time frame of pre-clinical training and its overall merits are discussed.

Ref: Modern approaches to teaching and learning anatomy. Collins JP, BMJ 337: 665 (2008).

Oral 2-7

IMPACT OF MEDICAL STUDENT WELL-BEING WORKSHOP ON THE MEDICAL STUDENTS' STRESS LEVEL: A PRELIMINARY STUDY

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OBJECTIVE: Medical training has always been regarded as a highly stressful environment to students. This article describes preliminary data on the impact of a stress-management programme on medical students' stress level.
METHODS: This uses a quasi-experimental before and after comparison study design. The programme was run over half a day and sampling method was applied. Sample size for this preliminary study was 38. The 12-item General Health Questionnaire (GHQ-12) was administered prior to the programme and four months later. Data was analysed using SPSS version 12.
RESULTS: 34 participants were involved in this study. This study found that there was a significant difference in participants' GHQ-12 scores before and after the programme ($p < 0.001$). It also found that the percentage of distressed participants to have been significantly reduced after they went through the programme ($p < 0.05$).
CONCLUSION: This study showed that the programme is a promising stress-management programme with the evidence of positive impact on medical students' mental health by reducing their stress level. It is well accepted by the medical students.

Oral 3-1

EFFECT OF CARBENDAZIM (METHYL-2-BENZIMIDAZOLE CARBAMATE) ON THE TESTICULAR INTERSTITIAL TISSUE OF THE JAPANESE QUAIL (*COTURNIX COTURNIX JAPONICA*)

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Carbendazim is a metabolite of the fungicide benomyl, which is widely used on agricultural produce. Research on the effect of carbendazim on the avian testis has concentrated on the seminiferous tubules, with less attention being given to the testicular interstitial tissue. This study describes the ultrastructural and immunohistochemical changes occurring in the testicular interstitial tissue of the Japanese quail post-exposure to carbendazim. Thirty-six adult Japanese quails were administered carbendazim (400mg/kg bodyweight) in sunflower oil by oral gavage. Thirty-six birds received the oil base alone. Six birds from the treatment and control groups were sacrificed at 5h, 24h, 5d, 8d, 12d and 32d. Testicular tissue was processed routinely for light and electron microscopy. The immunostaining technique was performed using a LSAB+ kit (Dakocytomation, Denmark). Antibodies against desmin, smooth muscle actin (SMA) and vimentin were used at dilutions of 1:50, 1:50 and 1:100 respectively. The ultrastructure and immunostaining of the interstitial tissue 5 hours post-exposure did not differ from that of the control birds. Peritubular myoid cells were strongly immunopositive for vimentin, desmin and SMA. Leydig cells were vimentin immunopositive. Swollen membranous organelles were observed in myoid and Leydig cells 24 hours post-exposure. Although intra-cytoplasmic densities were present in the myoid cells 8 days post-exposure, microfilaments and pinocytotic vesicles were absent. At this stage myoid cells exhibited a marked decrease in desmin immunostaining. Fibrosis of the peritubular boundary tissue was evident at 12 days post-exposure. Vimentin immunoreactivity was either weak or absent in the degenerating Leydig cells. At 32 days post-exposure the seminiferous tubules were enclosed in a thickened, scalloped basal lamina. The results of this study indicate that carbendazim has a deleterious effect on the components of the interstitial tissue. Since myoid and Leydig cells modulate Sertoli cell function, carbendazim may have an indirect effect on spermatogenesis.

Oral 3-2

IN SILICO DOCKING STUDIES ON MEC R1 FROM MULTIDRUG-RESISTANT MRSA WITH A PHYTOCOMPOUND PROVEN TO HAVE AN INHIBITORY ROLE BY SALT TOLERANCE ASSAY

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Staphylococcus aureus has gained much attention in the last decade as it is a major cause of several infections. Drug resistant *S.aureus*, especially the methicillin resistant *S.aureus* (MRSA) is highly resistant to several conventional antibiotics, including methicillin, which is commonly used for staphylococcal infections. This limits therapeutic options. Hence efforts are now taken to screen medicinal plants, which are both economic and less toxic. Among the several plants screened, we have chosen the methanol extract of *Eugenia jambolana* from which we purified a new saponin for our study. Wet lab analysis by salt tolerance assay suggested the role of saponin on cell membranes of MRSA. This was supported by computational analysis, where the structure of saponin was generated using CHEMSKETCH software and the activity prediction was done using PASS PREDICTION software. We have confirmed the mechanism of an anti-bacterial effect of saponin using Computer –Aided Drug Design (CADD) with computational methods to simulate drug–receptor interactions. The Protein-Ligand interaction plays a significant role in structural based drug designing. In this present study we have taken the mec r1 protein responsible for drug resistance. This protein and saponin were docked using HEX docking software and the docking score was calculated. It infers that the saponin can inhibit the activity of mec r1 by forming a strong atomic interaction with the active site residues. Hence the saponin can act as a drug for bacterial infections with multi drug resistance. Further investigations can be carried out to predict the activity of saponin on other targets.

Oral 3-3

THE EFFECT OF CARBOFURAN ON THYROID GLAND OF MALE

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INTRODUCTION: Carbofuran is a carbamate pesticide that is widely used in Malaysia. As an acethycholinesterase inhibitor, it exerts various adverse effects to the non-target organisms. Despite being one of the endocrine disrupting chemicals, there is scarce evidence of its effect on thyroid gland.
OBJECTIVES: The purpose of this study is to investigate the effect of Carbofuran on thyroid gland by identifying the histopathological and histomorphometric changes, determining the thyroid activation index and quantifying the serum tri-iodothyronine (T3) and thyroxine (T4) level after exposure to Carbofuran.
METHOD: This was a randomized control trial. 18 Sprague Dawley rats between seven to ten weeks old were divided into control and intervention groups. The intervention group received 2.4 mg/kg Carbofuran orally for 28 days, while the control group received equivalent amount of vehicle. Sections of thyroid glands were sampled using the systemic uniform random sampling method and were stained with hematoxylin and eosin dyes. The serum tri-iodothyronine (T3) and thyroxine (T4) were measured by ELISA method.
RESULTS: The study revealed abnormal thyroid gland in intervention group in term of damaged follicles ($p < 0.05$), increased interstitial space ($p < 0.05$), abortive follicles ($p < 0.001$) and hyperplastic follicles ($p < 0.05$). Besides that, the colloid area and colloid circumference were found to be significantly higher ($p < 0.05$) while thyroid activation index and serum thyroxine (T4) were significantly lower in intervention group ($p < 0.05$).
CONCLUSION: Carbofuran induced thyroid toxicity by altering the follicular structure, reducing colloid resorption and reducing the serum thyroxine (T4) level.

Oral 3-4

INVESTIGATION OF THE ASSOCIATION BETWEEN ESTROGEN AND PROGESTERONE RECEPTORS IN BREAST CANCER BY IMMUNOHISTOCHEMICAL ASSAY

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The aim of this study is to investigate the association between Estrogen and Progesterone Receptor in breast cancer by an immunohistochemical assay to determine over expression of ER and PR in breast cancer tissue routinely processed for histological evaluation. Samples of breast cancer obtained from Rajiv Gandhi cancer and research centre were characterized morphologically and immunohistochemically using antibodies to estrogen and progesterone receptors.
Immunohistochemical (IHC) staining technique allow for the visualization of antigens via the sequential application of a specific antibody to the antigen (primary antibody), a secondary antibody to the primary antibody and an enzyme complex with a chromogenic substrate with interposed washing steps. The enzymatic activation of chromogen results in a visible reaction product at the antigen site. The specimen may then be counterstained and coverslipped. After mounting, the slides were viewed under the light microscope for evaluation of the immunohistchemical staining and scoring.
Immunohistochemistry allows specific protein to be visualized while retaining cellular and tissue structure. The collected data suggests that estrogen and progesterone receptor status will help in determining whether or not one or both of these hormones fuel the tumor. Out of 40 patients 11 were ER and PR negative that shows tumor is not driven by estrogen and progesterone hormone. In 29 patients both ER and PR are positive (value lying between 80% to 100%) so these kind of breast cancer respond well to hormone suppression treatments and can be treated with medicines like Femara and Arimidex. Immunohistochemistry allows specific proteins to be visualized while retaining cellular and tissue structure. This data suggests that detection of ER and PR by immunohistochemistry can provide useful clinical information. Hence, this study proves proper identification of ER and PR in studying and understanding the tumor characteristics and paves a way for hormonal therapy in breast cancer.