

58. Al-Muhannadi N, Ansari N, Brahmi U, Satir AA. Differential diagnosis of malignant epithelial tumours in the liver: An immunohistochemical study on liver biopsy material. *Annals of Hepatology*. 2011 //;10(4):508-15.

Introduction. A variety of primary and secondary malignant tumours may present in the liver. In clinical practice the most commonly encountered hepatic tumours are primary hepatocellular carcinoma, metastatic carcinoma and primary cholangiocarcinoma, each with its separate prognostic and management implications. When these tumours are poorly differentiated and the biopsy size is limited to a needle core, the distinction can be extremely difficult. **Material and methods.** All liver tumours reported between 1994 and 2004 were examined. Slides from each case were tested separately with each of nine antibodies (HepPar1, CD10, MOC31, Villin, pCEA, mCEA, CK7, CK19, and CK20). **Results.** Liver biopsy tissue from 53 patients was examined in this retrospective study. The 53 liver biopsies were classified thus: hepatocellular carcinoma (n = 23); metastatic adenocarcinoma (n = 15); cholangiocarcinoma (n = 5); metastatic small cell carcinoma (n = 7); liver cell dysplasia (n = 1); carcinoid (n = 1); and unclassified (n = 1). Sensitivity and specificity values for different antibodies in relation to their positive staining of specific tumours was as follows: HepPar1 for HCC-81.8% and 100%; MOC31 for MA-73.3% and 92.1%; MOC31 for MA and CC as a combined group-65% and 100%; pCEA (canalicular) for HCC-82.6% and 83.3%; mCEA for MA-93.3% and 75.6%; CK7 for CC-100% and 68%; CK19 for MA and CC as a combined group-90% and 86.3%. **Conclusions.** An antibody panel consisting of HepPar1, pCEA, CK19 and CK7 together with either MOC31 or mCEA is recommended for use in the differential diagnosis of HCC, MA and CC.

59. Almuqammam MA, Ebrahim MA, Radhi HA, Henari FZ. Refractive Errors in the Bahrain Population. *World Family Medicine Journal*. 2011;9(2):7-11.

Aim: The objective of this study was to demonstrate the prevalence of refractive errors in the Bahrain population. **Method:** A total of 17,936 eye patients between 10-35 years of age living in Bahrain were included in this study. A data record for 2008 was collected from Bahrain Optician clinics. The records involved patients with refractive errors such as myopia (nearsightedness), hyperopia (farsightedness), astigmatism and antimetropia (one eye is myopic and the other is hyperopic).

Results: Out of 17,936 patients 54.6 % were myopic; 4.9 % hyperopic; 39.9% astigmatismic and 0.6% antimetropia. For myopia patients, the prevalence was the highest at 25.6% for patients between the ages of 15- and decreasing to 15.8% for patients of ages 30-35. The prevalence of hyperopia was 18.3% for patients of 15-19 years of age and increased to 22.9% for patients of 30-35 years of age. For astigmatism the prevalence was the highest at 21.3% for patients of 15-19 years of age and was lowest at 18.9% for patients of 10-14 years of age and for antimetropia the prevalence was the highest at 23.6% for patients of 20-24 years of age and was the lowest at 15% for patients of 10-14 years of age.

Conclusion: The prevalence of refractive errors varies across different age groups. Myopia has the highest prevalence followed by astigmatism, while antimetropia is quite rare. Furthermore, patients in the age group of 15-19 showed high susceptibility to develop myopia and astigmatism.

60. Chan WS, Whitford DL, Conroy R, Gibney D, Hollywood B. A multidisciplinary primary care team consultation in a socio-economically deprived community: An exploratory randomised controlled trial. *BMC Health Services Research*. 2011 //;11.

Background: Psychosocial problems in socioeconomically deprived communities are not always amenable to traditional medical approaches. Mothers living in these areas are a particularly vulnerable group. The objective of this study was to evaluate the effectiveness of a lengthened multi-disciplinary team consultation in primary care in reducing anxiety and depression in mothers. **Methods.** This was a prospective randomised controlled trial of a multidisciplinary team consultation against normal care. 94 mothers were recruited from three general practices from an area of extreme socio-economic deprivation. Mothers randomised into the intervention group attended a multidisciplinary consultation with up to four case-specific health care professionals. Consultations addressed medical, psychological and social problems and lasted up to one hour. Conventional primary care continued to be available to the intervention families. Control group families received normal primary care services. The outcomes measured were anxiety and depression as using the Hospital Anxiety and Depression Scale (HADS), health status using SF36v2, and quality of life using the abbreviated Schedule for the Evaluation of Individual Quality of Life (SEIQoL-DW) at baseline, 6 months and 12 months. **Results:** Ordered logistic regression was used to analyse the data. There was no significant difference found between intervention and control groups after 6 months and 12 months in all of the measured outcomes. **Conclusions:** The new lengthened multi-disciplinary team consultation did not have any impact on the mental health, general health, and quality of life of mothers after 6 and 12 months. Other methods of primary health care delivery in socio-economically deprived communities need to be evaluated. © 2011 Chan et al; licensee BioMed Central Ltd.

61. Dakhel AA, Henari FZ. Optical and structural properties of silver nanoparticles embedded in indium oxide films. International Journal of Nanoscience. 2011 //;10(3):433-40.

Nanoparticles of silver-embedded indium oxide thin films have been prepared on glass and silicon substrates. Silver concentration were 3 wt.% and 5 wt.% as measured by X-ray fluorescence. X-ray diffraction reveals that indium oxide of these samples remains amorphous even after pre-annealing at 400°C. The optical absorption of the samples manifests the surface plasmon resonance (SPR) phenomena, which varies with Ag content. The Ag nanoparticles radius was estimated with Mie classical theory by using the SPR data analysis. The nonlinear optical properties of films on glass substrate were investigated using z-scan technique. Under cw excitation the films exhibit large reverse saturation absorption and negative nonlinearities. The real and imaginary parts of third order susceptibility of the samples were measured and the imaginary part which arise from the change in absorption is found to be dominant. © 2011 World Scientific Publishing Company.

62. Faisal H, Radwan A, Ansari N. Primary pulmonary botryomycosis presenting with septic shock and acute lung injury. BMJ Case Reports. 2011 //.

Botryomycosis is a rare chronic suppurative bacterial infection involving mostly subcutaneous tissues and less frequently other organs. It can be diagnosed by histological examination and culture of the granules. Botryomycosis is mostly caused by *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa* but the exact pathogenesis remains uncertain. Treatment often requires a combination of both surgical debridement and long-term antimicrobial therapy. The patient is a young woman known to have Down's syndrome. She had a dramatic presentation with septic shock and acute lung injury with persistence of pulmonary sepsis postoperatively. The importance of postoperative critical care is illustrated by this case in which a young patient underwent major surgery while septic and haemodynamically unstable. According to our research this is the first case of pulmonary botryomycosis reported in Down's syndrome and the first case which developed septic shock requiring vasoactive drugs and ventilation in the intensive care unit. Copyright 2011 BMJ Publishing Group. All rights reserved.

63. Garadah TS, Kassab S, Golbahar J. Association of hypokalemia with severe arrhythmias in patients with acute myocardial infarction. Bahrain Medical Bulletin. 2011 //;33(1).

Background: Clinical and animal studies suggest that the ischemic heart can be particularly vulnerable to hypokalemia leading to the cardiac arrhythmia. Objective: To evaluate the association of severe arrhythmia with hypokalemia in patients with acute myocardial infarction (AMI). Design: Retrospective study. Setting: Coronary Care Unit, Salmaniya Medical Complex. Method: Two hundred and seventy-four patients with AMI had serum potassium levels measured on admission along with other cardiovascular risk factors. Result: Serum potassium concentrations were significantly decreased with the severity of arrhythmias (no arrhythmias; 4.2 ± 0.80 mmol/l, supra-ventricular; 3.8 ± 0.9 mmol/l, and ventricular arrhythmias; 3.3 ± 0.5 mmol/l, $p=0.0001$). The risks of supra-ventricular and ventricular arrhythmias were significantly increased by 2.4 and 8.3 fold, respectively in patients with serum potassium levels at the lowest quartile (<3.5 mmol/l) compared with the highest quartile of serum potassium when adjusted for other risk factors. Conclusion: The results of this study suggest that hypokalemia is independently associated with the severity of arrhythmias in patients with AMI.

64. Garadah TS, Mahdi N, Kassab S, Abu-Taleb A, Shoroqi I, Alawadi AH. The impact of two different doses of chelating therapy (deferasirox) on echocardiographic tissue Doppler indices in patients with thalassemia major. European Journal of Haematology. 2011 //;87(3):267-73.

Background: Chelating therapy in transfusion-dependent patients with β -thalassemia major (β -TM) is mandatory to reduce the toxic effect of iron on the myocardium. Aim: To evaluate the impact of low and high dose of oral chelating therapy (deferasirox) on pulsed and tissue echocardiographic indices in patients with β -TM. Methods: This interventional study conducted on patients with transfusion-dependent β -TM ($n=38$) on deferasirox 20mg/kg/d medication, group (DFX-20) for at least 6months, followed by administration of a higher dose of deferasirox, 40mg/kg/d, group (DFX-40) for another 6months. Pulsed and tissue Doppler echocardiography carried out at the beginning and at the end of treatment interval (6months) for both groups, with monthly blood analysis of serum ferritin, alanine transaminase, hemoglobin, and creatinine. An age-matched control group of 38 patients was evaluated for echo Doppler blood analysis. Results: Patients of group DFX-40 compared with group DFX-20, the tissue Doppler echocardiogram showed lower E/Em ratio (16.01 ± 2.85 vs. 19.68 ± 2.81 , $P<0.05$), higher systolic wave velocity (Sm) (5.87 ± 1.40 vs. 4.80 ± 1.20 , $P<0.05$), and higher early diastolic wave (Em) velocity (4.25 ± 1.70 vs. 3.50 ± 1.80 , $P<0.05$), respectively. Patients in group DFX-20, compared with control group, had M-Mode echo with thicker left ventricle (LV) septal wall ($P<0.001$) and posterior wall ($P<0.01$), higher left

ventricle end diastolic diameter index ($P<0.05$). The pulsed Doppler echocardiogram showed a higher LV transmitral E wave velocity ($P<0.05$), higher E/A ratio ($P<0.01$), and the duration of deceleration time was significantly shorter ($P<0.01$). There were no significant changes observed in the left ventricle ejection fraction percentage (LVEF%) or fractional shortening between both treatment groups. Serum ferritin was significantly lower in DFX-40 group compared with DFX-20 β -TM group (338). There was a significant positive correlation between the serum ferritin and the E/Em ratio ($r=0.31$, $P<0.001$). The tricuspid valve velocity was significantly higher in β -TM patients compared with the control group ($P<0.05$). Conclusion: The increment of oral deferasirox as chelating therapy in β -TM patients to 40mg/kg/d over 6months duration showed a significant increments of systolic and diastolic tissue Doppler velocities with a significant reduction of E/Em ratio in comparison with 20mg/kg/d. There were no changes of LVEF. A longer duration of follow-up may be justified in such group of patients. © 2011 John Wiley & Sons A/S.

65. Hayes A, Holden-Rachiotis C, Kavanagh B, Otoom S. Bridging the gap: On easing the transition from arab secondary to western third level learning. Evaluation and Research in Education. 2011 //;24(2):105-20.

Learning and achievement issues among Foundation Year (FY) students at the Royal College of Surgeons (RCSI) Bahrain have been responded to by the Language and Culture Unit to address the educational problems that have arisen as a direct consequence of the differences in skills students have on leaving secondary school and the skills that are required at third level institutions. The findings of the study assess the extent to which an integration of sustainable development into course objectives and learning outcomes takes place and how the content of the course responds to specific students' needs. The research consists of an in-depth quantitative and qualitative case study that evaluates the extent to which the course enables the transition from a secondary to a third level institution and teaches the students the skills required to 'survive' at a western type university. In support of our claim, the results from this case study will be presented and implications of a more general relevance will be suggested. Our model of an academic skills intervention programme can be applied to other higher education institutions where issues of transition from secondary to third level learning may be problematic. © 2011 Taylor & Francis.

66. Henari FZ, Asiri AM. Non-linear refractive index measurement of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one. Journal of Nonlinear Optical Physics and Materials. 2011 //;20(2):183-91.

We report results from investigations of the nonlinear refractive index and nonlinear absorption coefficient of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one using Z-scan technique with a continuous wave (cw) laser at wavelengths 488 nm and 514 nm. The nonlinear refractive index and nonlinear absorption coefficient of both samples were evaluated. The origin of the nonlinear effects was discussed. Optical limiting based on light induced nonlinear refractive index variation is demonstrated. The limiting thresholds were estimated for both samples. The results suggested that these materials offer promise as candidates for optical limiting and optical devices in the low power regime. © 2011 World Scientific Publishing Company.

67. Henari FZ, Dakhel AA. Observation of simultaneous reverse saturation absorption and saturation absorption in silver nanoparticles incorporated into europium oxide thin film. Optics Communications. 2011 //;284(2):651-5.

In this work, nano silver clusters incorporated into europium oxide thin films at a level of 3.8% and 12.5% have been prepared by a vacuum evaporation method on glass and silicon substrates. Samples were investigated by X-ray fluorescence, X-ray diffraction, and linear and nonlinear optical absorption methods. The X-ray diffraction reveals that the Eu oxide of these samples remains amorphous after pre-annealing at 400 °C. The linear optical absorption of the samples shows surface plasmon resonance (SPR) phenomena, which varies with the Ag content of the samples. The optical nonlinear absorption properties of the prepared films were investigated using an open Z-scan technique with cw laser at wavelengths 476 nm and 514 nm. A changeover from reverse saturation absorption (RSA) to saturation absorption (SA) was observed. RSA is attributed to interband transition via two photon absorption. SA is attributed to plasmon bleach. © 2010 Elsevier B.V. All rights reserved.

68. Jassim GA. Strategies for managing hot flashes. Journal of Family Practice. 2011 //;60(6):333-9.

69. Lynch CD, O'Sullivan VR, Dockery P, McGillicuddy CT, Rees JS, Sloan AJ. Hunter-Schreger Band patterns and their implications for clinical dentistry. Journal of Oral Rehabilitation. 2011 //;38(5):359-65.

Hunter-Schreger Bands (HSBs) are an optical phenomenon visualised when a cut or fractured enamel surface is viewed under reflected light. These bands demonstrate the synchronous decussation of individual or groups of enamel prisms. While the role of HSB patterns has been investigated in comparative anatomical studies, until recently there has been little consideration of HSB patterns in human teeth. The aim of this paper is to consider the significance of HSB patterns in the human dentition and in relation to clinical dentistry. It is concluded that within the human dentition, HSB patterns have evolved to optimise resistance to attrition, abrasion and tooth fracture. It appears that certain aspects of HSB packing densities and distributions have beneficial roles in enamel bonding. Hunter-Schreger Band patterns seem to passively facilitate conditions such as abfraction and cracked tooth syndrome. © 2010 Blackwell Publishing Ltd.

70. O'Reilly F, O'Connell D, O'Carroll A, Whitford DL, Long J. Sharing control: User involvement in general practice based methadone maintenance. Irish Journal of Psychological Medicine. 2011 //;28(3):129-33.

Objectives: This study assessed patients' views of a methadone programme in a Dublin general practice including the degree to which the patients were 'involved in decisions about their treatment'. **Method:** All patients receiving methadone were asked to participate. A face to face questionnaire, with open and closed questions, was administered. Interviews lasted approximately 30 minutes. Quantitative data were analysed using descriptive statistics and qualitative data were analysed using a thematic approach. **Results:** Forty one (87%) of the 47 patients attending the general practice methadone service were interviewed. Of the 39 patients who had used heroin on admission, 69% had stopped and 31% reduced heroin use since starting methadone treatment. A total of 71% reported that the doctor either always involved (59%) or sometimes involved (12%) them in decisions about their treatment. Involvement was interpreted as 'being listened to' or 'having a say' in deciding methadone dose. Surprisingly those who reported that they were not involved in treatment decisions were more likely to have stopped heroin use (10/11). A significant majority of patients (81 %) expressed the desire to stop taking methadone. **Conclusion:** Most patients receiving methadone in general practice were listened to and had a say in deciding their methadone dose but did not have an opportunity to engage in more structured or contractual forms of involvement in treatment such as written care plans. In line with a patient centred approach, treatment providers should set their sights beyond the safe delivery of methadone, to provide a service which is centred on patient goals, expectations and choice.

71. Otoom S, Sequeira RP. Veratridine induced absence like-seizure in the freely moving rats: A study correlating the behavioural findings with the electrophysiological activities. Neuroendocrinology Letters. 2011 //;32(4):487-90.

OBJECTIVES: Veratridine was characterized previously as an experimental model of epilepsy in vitro. The aim of this preliminary investigation is to identify the pattern of seizure induced by this model in vivo. **MATERIAL AND METHODS:** Veratridine (200 µg/kg) was administered intraperitoneally to male Sprague-Dawley rats and the electrical activity of the brain was recorded as surface electroencephalogram (EEG). **RESULTS:** The animals developed behavioral effects manifested as grooming, masticatory movements, facial automatism and wet dog shakes (WDSs). There were episodes of complete quiescent periods for 2-5 minutes before the animals presumed activity which were repeated every 15-20 minutes. The seizure activity during this silent activity showed fast frequency signals in the surface EEG correlating with absence seizure. The WDS behaviour was associated with electrical spikes on the EEG. When the rats were pre-treated with 200mg/kg ethosuximide (ETX), EEG recordings did not display the same fast frequency signal as that observed in animals receiving veratridine only. The number and duration of WDSs were not altered by ETX (200-400 mg/kg). **CONCLUSION:** Veratridine produced an absence like-seizure activity in the surface EEG, sensitive to ETX and correlates with its behavioural effects. © 2011 Neuroendocrinology Letters.

72. Shivji ZM, Al-Baharna MM, Kadi GA, Al-Osaimi AM, Bin-Sadiq BM, Jan MM. Pediatric electroencephalography. Parent's knowledge and experience. *Neurosciences*. 2011 //;16(3):283-4.

73. Smith SM, Paul G, Kelly A, Whitford DL, O'Shea E, O'Dowd T. Peer support for patients with type 2 diabetes: Cluster randomised controlled trial. *BMJ*. 2011 //;342(7795):482.

Objective: To test the effectiveness of peer support for patients with type 2 diabetes. Design: Cluster randomised controlled. Setting: 20 general practices in the east of the Republic of Ireland. Participants: 395 patients (192 in intervention group, 203 in control group) and 29 peer supporters with type 2 diabetes. Intervention: All practices introduced a standardised diabetes care system. The peer support intervention ran over a two year period and contained four elements: the recruitment and training of peer supporters, nine group meetings led by peer supporters in participant's own general practice, and a retention plan for the peer supporters. Main outcome measures: HbA 1c; cholesterol concentration; systolic blood pressure; and wellbeing score. Results: There was no difference between intervention and control patients at baseline. All practices and 85% (337) of patients were followed up. At two year follow-up, there were no significant differences in HbA 1c (mean difference -0.08%, 95% confidence interval -0.35% to 0.18%), systolic blood pressure (-3.9 mm Hg, -8.9 to 1.1 mm Hg), total cholesterol concentration (-0.03 mmol/L, -0.28 to 0.22 mmol/L), or wellbeing scores (-0.7, -2.3 to 0.8). While there was a trend towards decreases in the proportion of patients with poorly controlled risk factors at follow-up, particularly for systolic blood pressure (52% (87/166) >130 mm Hg in intervention v 61% (103/169) >130 mm Hg in control), these changes were not significant. The process evaluation indicated that the intervention was generally delivered as intended, though 18% (35) of patients in the intervention group never attended any group meetings. Conclusions: A group based peer support intervention is feasible in general practice settings, but the intervention was not effective when targeted at all patients with type 2 diabetes. While there was a trend towards improvements of clinical outcomes, the results do not support the widespread adoption of peer support. Trial registration: Current Controlled Trials ISRCTN42541690.