Hypervitaminosis A and Its Histologic Effects on Mice Testes

In order to study the therapeutic effects of high doses of vitamin A on male fertility, its histologic effects on mice testes were investigated.

In this study, 48 adult white male mice in the same age (60±3 days) were used. The animals were divided into control and experimental groups and were kept in controlled conditions. The experimental group received daily dosage of 25,000 IU vitamin A (retinol palmitate) intramuscularly for seven days. After the last injection, at two-, four-, and eight-day intervals, changes in testicular weight, volume, consistency, and histologic sections of the testes were studied. In addition, each time, epididymal spermatozoa were observed. The first control group received 0.05 mL normal saline and the second one received 0.05 mL palmitic acid intramuscularly.

The results indicated that the testes’ weight (P≤0.002), volume (P≤0.03), and consistency (P≤0.001) decreased significantly. Histologic studies also revealed a severe loss of connective tissue in tunica albuginea and tunica vascularis. Leydig cells and seminiferous tubes showed degeneration.

These findings indicated that hypervitaminosis A could affect the male fertility in mice.

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Colonization Rate of Intravascular Catheters and Catheter-Related Bacteremia in Neonatal Intensive Care Unit

Peripheral intravenous catheters are increasingly used in neonatal intensive care units (NICUs) to administer intravenous fluids, blood products, drugs, and nutrients. Catheter infection is associated with increased morbidity, mortality, and duration of hospital stay.

This was a descriptive study carried out on 100 newborns in the NICU of Qods Hospital in Qazvin, Iran in 2005. The infants’ catheters were removed for various reasons. A length of 3 cm from the catheter tip was cut aseptically and placed in thioglycolate media. In case of any growth within the next seven days, subcultures on blood agar and MacConkey agar media were performed followed by bacterial identification. Drug susceptibility profiles of isolated bacteria were detected according to standard methods. Before catheter removal, a blood sample from each newborn was taken for culture, microbiological identification, and susceptibility assay.

Of the 100 catheter tips, 35 (35%) samples produced positive cultures. Of them, 19 (52%) cultures were positive for coagulase-negative staphylococci. Positive blood cultures were detected in seven patients (7%) who had catheters colonized with bacteria. Of them four patients had been contaminated with coagulase-negative staphylococci and three patients with coagulase-positive staphylococci. Coagulase-negative staphylococci isolated from the catheters were mostly resistant (100%) to ampicillin and amoxicillin. The lowest (18%) resistance was associated with vancomycin. Thus, application of intravascular catheters in neonates should be accompanied by great attention in making a balance between the need for vascular access and the risk of bacteremia. So, adequate control and rigorous preventive measures must be established when a vascular access is necessary.

Authors: Daneshi MM, Sarookhani MR, Habibi M.
Delay in Diagnosis and Treatment of Gastric Cancer from the Beginning of Symptoms to Surgery

In developed countries, diagnosis of gastric cancer is made in early stages through screening. So, the five-year survival rate has increased to 86%. In developing countries patients may have digestive symptoms for quite a while, but they usually are not referred for early endoscopy. The patients are referred to the physicians in advanced stages. This study was conducted to determine the median time of delay from the beginning of symptoms to surgery.

In this research, 63 patients suffering from gastric cancer were investigated during 2004 – 2005, Tabriz, Iran. The questionnaire was completed from the time of patient’s admission to endoscopy until surgery, through interview with the patients. Mann-Whitney statistical test and SPSS software were used for data analysis.

Of the 63 patients, 48 (76.2%) were males and 43 (68.3%) were rural residents. The most common site of cancer area was cardia (in 31 patients) and the most common symptom was abdominal pain (in 28 patients). The results showed that the median total delay from the beginning of symptoms until surgery was 96 days. The patient’s delay was eight days, general practitioner’s delay (from the first referring to endoscopy) was 57 days, from endoscopy to pathology affirmation was 12 days, and from pathology affirmation to surgery performance was seven days. Factors such as place of residence, education, income, and gender had no significant effect on the time of delay.

Delay from referring to endoscopy performance and from performance of endoscopy to pathologic confirmation was higher than expected. Screening plan for timely referring of patients and performance of endoscopy seem essential.

To reduce the delay, in the gastric cancer diagnosis, a team approach is needed.

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Comparison of Statistical Modeling Strategies for Analyzing Length of Stay in Shiraz Educational Hospitals

The modeling of inpatient length of stay (LOS) has important implications in various aspects of health-care management, such as hospital management and planning, management of health-care resources, and the performance in hospital care. For many health-care management systems, it is important to develop a comprehensive analysis of LOS and to identify hospital- and patient-related characteristics influencing LOS variations. By targeting relevant factors, appropriate policies can be developed to manage the hospital care and the health-care resources effectively. Few studies have been carried out on LOS modeling in Iran.

This study has been carried out to compare different models for explaining LOS. A sample of 3,546 patients was selected using randomized clustered sampling scheme from different wards of teaching hospitals in Shiraz, Iran in 2005 and their hospitalization (LOS) rate registered as a response variable and other demographic variables registered as autonomous variables. Advance statistical models such as Poisson regression, zero truncated Poisson (ZTP), zero truncated negative binomial (ZTNB), and percentile regression were applied to analyze and modeling the data.

The mean±SD of LOS was calculated as 8.4±13.7 days. Over-dispersion for LOS was observed. Therefore, negative binomial, gamma, ZTP, ZTNB, and percentile regression were applied. The results showed that ZTNB was an efficient model for explaining LOS in Shiraz hospitals.

Given heterogeneity in LOS in different wards in Shiraz hospitals, negative binomial model explains adequately the LOS values. Also, percentile regression model seems appropriate for LOS, which was applied to our data. Application of the cited models here to other hospitals around the country is suggested.

Authors: Rafiee M, Ayatollahi SMT, Behboodian J.
Assessment of Proportional Hazard Rate of Endocrine Diseases in Major Beta-Thalassemia

Thalassemia is the most common hemolytic anemia in Iran and around the world that needs regular blood transfusion. Transfusion leads to iron overload in the body. Absence or irregular chelation therapy in these patients leads to various complications such as cardiac diseases, endocrine disorders, and infectious diseases such as HIV and hepatitis. The purpose of this study was to evaluate the hazard rate of endocrine diseases and related factors using Cox model.

This cross-sectional study was carried out between 2005 and 2006 on 806 thalassemic patients (406 males and 400 females) referred to the Cooley’s Ward of Dastgheib Hospital in Shiraz, Iran. The patients were studied using a structured questionnaire through enumeration method. Age at the diagnosis, demographic information, age at the onset and type of transfusion, and age at the onset and method of chelation therapy were specified. Specialist physicians diagnosed the complications. Data were analyzed using descriptive and analytical (proportional hazard rate and its confidence interval using Cox model) statistical methods.

The range of the patients’ age was from one to 43 years and the mean age ± SD was 15.34±6.82 years. The prevalence rates of hypogonadism, hypothyroidism, hyperparathyroidism, and diabetes mellitus were 14.5%, 2.4%, 6.9%, and 7.5%, respectively. The mean ages±SD at the onset of hypogonadism, hypothyroidism, hypoparathyroidism, and diabetes mellitus were 18.42±3.6, 15.83±3.5, 16.98±4.5, and 17.19±4.8 years, respectively. There was a significant association between proportional hazard rate of all complications and age at the onset of chelation therapy ($P<0.05$). Proportional hazard rate of hypogonadism was also related to the sex and educational level of the patients’ mothers ($P<0.05$). Proportional hazard rate of hyperparathyroidism was related to sex and occupational status of the patients’ mothers.

To prevent these complications, it is recommended that the onset of blood transfusion be based on the onset of chelation therapy. Educational level of parents and educating the parents and patients are very important. Progression of complications can be prevented by regular follow -up and early diagnosis of complications.

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Comparison of 50% Trichloroacetic Acid with CO2 Laser in the Treatment of Cutaneous Leishmaniasis Scar

The scars of cutaneous leishmaniasis and its psychological problems need various interventions. The objective of this study was to compare the efficacy of trichloroacetic acid (TCA) 50% solution with CO2 laser for treatment of atrophic scars in leishmaniasis.

This was a randomized clinical trial performed on 92 patients. The patients were randomized into two groups. In the first group, the patients were treated with TCA 50% solution, once monthly for a maximum of five months. The patients in the second group were treated by CO2 laser that was performed only once. The patients were followed at three and six months after starting the treatments. The improvement of scar was graded by a six-point scale using digital camera and the collected data were analyzed using SPSS software and $t$, Wilcoxon, and Mann-Whitney tests.

In this study, 74 females and 18 males were followed, and the improvement of scar was 48.13% in the TCA group and 44.87% in the CO2 laser group. This difference was not statistically significant ($P=0.55$). There was also no significant difference regarding the side effects between these two groups.

The results of our study showed that the efficacy of topical treatment with 50% TCA solution is comparable with CO2 laser in the treatment of leishmaniasis scar. Because of the low cost and simple application of TCA solution in comparison with CO2 laser, we suggest the use of this treatment for leishmaniasis or atrophic scars.

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Clinical and Inheritance Pattern of Familial Hypokalemic Periodic Paralysis

Hypokalemic periodic paralysis is a rare autosomal dominant disorder in skeletal muscles, which is characterized by episodic attacks of muscle weakness with concomitant hypokalemia. The precipitating factors include carbohydrate-rich meals, and rest after exercise. Rapid diagnosis of the disease is important in management and prognosis.

In this study, we evaluated the clinical features, laboratory findings, and inheritance pattern of the disease in a large affected family in Lorestan Province of Iran.

The patient was an 18-year-old man who developed sudden weakness in his four limbs after taking carbohydrate-rich meals. The clinical and laboratory findings during attacks were coincident with a hypokalemic situation. In his pedigree, his father and some of his family had been affected. The pedigree showed several instances of male to male transmission. In most cases, the disease was not due to consanguineous marriage. Analysis of the pedigree revealed that the inheritance pattern was autosomal dominant with reduced penetrance in females.

The disease has genetic heterogeneity, but in most cases it is caused by mutations in a calcium channel gene (CACNLIAS) or a sodium channel gene (SCN4A). It is important to notice that in this study, unlike other studies, the penetrance of the disease in males was not 100%.

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