Preanesthetic evaluation *Importance of herbal drug usage in anesthesia practice*

Leyla Iyilikci, *MD,* ***Bahar Kuvaki,*** *MD,*
Basak Canduz, *MD,* ***Huriye Begburs Sarıkaya,*** *MD,*
Dilek Kural, *MD,* ***Ali Gunerli,*** *MD.*

Plants are used widely in many countries as folk remedies, nutritional support and herbal drugs. People believe that these natural products are safe and harmless. Exaggerated news regarding herbal products is available nearly everyday in audiovisual and printed media. Combinations of herbal medicines with conventional prescribed medicines may be dangerous. Especially in the context of anesthesia, where multiple drugs are administered over a short period, herbal products represent a potential risk to patient safety. This is particularly the case if the anesthetist is not aware that the patient is taking such a product. During preanesthetic evaluation, routine drug usage is questioned but herbal products are not.[1-5] We started a study to question the extent of herbal medicine use in patients undergoing/receiving surgery and anesthesia, and to determine the most frequently used herbals.

The study was started after the approval by the Clinical Research Ethics Committee of Dokuz Eylul University Medical School. A questionnaire consisting of 10 questions was given to 997 patients during a 12 months period. We included all patients above 18 years undergoing elective surgery. On completion of each preanesthetic evaluation, patients were administered the questionnaire to determine their usage of any drug and any herbal medicines and related dietary supplements, including multivitamins. As part of each preanesthetic evaluation, patients were asked if they were taking any medications or drugs. The questionnaire included a list of commonly used herbal medicines listed by their generic names. A space was allowed for patients to include any product that was not on the list. The questionnaire included questions regarding the demographic features (gender, age, education) concomitant drug, vitamin, and herbal use, application methods, reasons for beginning that therapy, whether the patient was questioned or not for herbal drug usage during previous anesthesia and whether he/she has information regarding the side effects of herbal products or not. The survey population included 57.7% female, 42.2% male patients, and the range of age was between 18-89 years (47.5 ± 16). Answers to the education level were 0.2% no answer, 9.2% primary school, 12.1% secondary school, 42.9% high school, 20% university, 15.6% postgraduate. It was reported that 22-43% of the patients undergoing surgery, used herbal products.[1] Kaye et al[1] questioned 1017 patients, preoperatively regarding herbal use. Thirty-two percent responded with yes, and 43% of the patients used garlic extracts, 32% Gingko biloba, 30% St. John's wort, 18% Ma Hung, 12% Echinacea, 10% Aloe, 8% Cascare, and 3% licorice. Vaabengaard and Clausen[2] reported that patients use fish oil, gingko, Echinacea, Ca-Q10, and garlic very frequently. Various surveys have shown general usage to range from 16-17% up to 60-70% of U.S. adults using herbs in the past year. Vitamin C was reported to be the most frequently used dietary supplement.[3] In our study, herbal product use was 50.9% in adults, and 20% of the subjects were using more than one product. In our study herbal product usage was high, as in the Aegean Region people eat dominantly vegetables; they have a high education level and so are ambitious to try new treatments they read in newspaper, book or internet. In addition to herbal products, 24.7% of our patients were using multivitamin complexes (B1, B6, B12, Vit A, and Vit C). Sixteen percent of the patients were using garlic. Garlic decreases blood pressure and cholesterol levels and inhibits platelet aggregation.[3-5] Gingko improves cognitive functions and peripheral perfusion (impotence, macular degeneration) and inhibits platelet activation. St. John's wort improves slight and moderate depression. The major problem with this herbal is its potential to change the other drugs' metabolism. It increases the drug's metabolism with cytochrome- P450.[3,5] Ephedra is used to support weight-loss and to increase the energy consumption. It leads to sympathetic stimulation such as ephedrine with increased heart-rate and blood pressure, dysrhythmias, myocardial infarction and stroke, so monoamine oxidase inhibitors must be avoided. Ephedra interacts with volatile anesthetics (halothane, desflurane, isoflurane). Gingko biloba, kava kava, and Echinacea can elongate the duration of sedation and effective period of barbiturates.[1,3] Ephedra and ginseng can cause hypertension with long-term usage.[3] Licorice has a widespread use for intestinal problems and its side effects are high blood-pressure, arrhythmias, sodium retention. It can cause cardiac problems due to significant hypokalemia. Electrocardiography changes can be seen during anesthesia due to electrolyte changes. Metabolic activity of cytochrome P450 3A4, can change the metabolism of many drugs. It also inhibits platelet aggregation.[5] Echinacea stimulates the immune system. It shows allergic reactions, hepatotoxicity

and interaction with immunosuppressive therapies (organ transplantation).[1,3] Green tea prevents cancer with its antioxidant effect, stocks strength due to concentrated vitamins, enzymes, and coenzymes. It improves cholesterol and fat levels and sets the blood pressure and blood glucose levels so, prevents atherosclerosis. It helps to lose weight. In our study usage rate of green tea was 10%, and due to its diuretic effect, it decreases the blood pressure and glucose.[1,3] In our study, 37.5% of the patients used concomitant drugs for other diseases. It is very important to know the interactions between the herbal drugs and other drugs in the peroperative period. The American Society of Anesthesiologists recommends ceasing the usage of herbal drugs at least 2 weeks before the procedure, due to their potential side effects and interactions with anesthetic drugs.[5] In the literature, it is recommended to stop kava and ephedra 24 hours, gingko 36 hours, St. John's wort 5 days before the procedure.[5] Garlic must be ceased at least one week before, Echinacea as early as possible and valerian decrement ally weeks before the surgery.[5] Today, premedication chapters of anesthesia books define the side effects of herbal drugs, the ones that must not be taken before anesthesia and that they must be questioned.[5] Herbal drugs have different application routes. In our study, 35% of them were taken orally, and rectal and topical routes were used. Friend's advice, newspaper or journal (24.2-20.3%) and internet (4%) were the major sources for beginning of the use of herbal products. The responders did not give any information regarding the products they use in previous preanesthetic evaluations, and also anesthesiologists did not question them regarding these products (97.4%). In our anesthesia record, we question the patient regarding the drugs, but there is not actually any item regarding herbal drugs. If there is information regarding herbal drug usage of the patient during preanesthetic evaluation for elective surgery, potential peroperative risks must be explained both to patient and clinician in detail. In addition, it is convenient to organize seminars for assistant education programs. These seminars are also necessary for surgery units to discuss the effects of herbal drugs on anesthesia, surgical morbidity and mortality, and proper guidelines must be prepared.

As a result, we believe that herbal drugs should be questioned during the preanesthetic evaluation and the clinician should be aware of the interaction with herbals and anesthetic drugs and their side effects.

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From the Department of Anesthesiology (Iyilikci, Kuvaki, Canduz, Begburs Sarikaya, Gunerli), Dokuz Eylul University, School of Medicine, Izmir, and Phytotherapy Postgraduate Student (Kural), Gazi University, Health Sciences Institute, Turkey. Address correspondence and reprint requests to: Dr. Leyla Iyilikci, Inonu cad. No: 264-2/12, 35280, Hatay, Izmir, Turkey. Tel. +90 (232) 4122807. Fax. +90 (232) 2775685. E-mail: leyla.iyilikci@deu.edu.tr

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The relation between anticardiolipin antibodies and complications of type 2 diabetes mellitus

Oznur Kal, *MD,* ***Fusun Gultekin,*** *MD,*
M. Zahir Bakici, *PhD,* ***Ali Kal,*** *MD.*

Diabetes mellitus (DM) is a syndrome of metabolism with inappropriate hyperglycemia, due to either an absolute deficiency of insulin secretion or a reduction in the biologic effectiveness of insulin. Type 2 diabetes is a powerful and independent risk factor for coronary artery disease (CAD), stroke, and peripheral arterial disease. Hyperglycemia, dyslipidemia, disturbances of platelet, and coagulation are responsible for accelerated atherosclerosis in DM. Inadequate of control of DM is involved in the pathogenesis of microvascular and macrovascular complications. Hyperglycemia and insulin resistance might lead to hypercoagulability in type 2 DM. Non enzymatic glycosylation of proteins and lipids, oxidative stress, immune complexes, and antiphospholipid antibodies (aPA) play a role in the pathologic alterations of microvascular and macrovascular complications. The aPA include lupus anticoagulants and anticardiolipin antibodies. We conducted this study to examine the relationship between anticardiolipin antibodies [aCL immunoglobulin G (IgG) and aCL immunoglobulin

M (IgM)] and complications of diabetes in type 2 DM.

This study was performed in the Department of Internal Medicine, Faculty of Medicine, Cumhuriyet University. It was designed as a retrospective and analytic study. The patients were divided into 3 groups. Group one included 35 patients who had complications of type 2 DM. The average age was 62.97 ± 7.54 years (range: 44-75 years). There were 17 (48.6%) men and 18 (51.4%) women. Group 2 consisted of 21 patients with type 2 DM that had no complications. The average age was 58.80 ± 7.08 years (range: 40-70 years); 11 (52.4%) men and 10 (47.6%) women. Group 3 comprised 21 normal patients that were studied as a control group. Their average age was 62.38 ± 6.31 years (range: 50-72 years). The control group comprised 10 (47.6%) men and 11 (52.4%) women. Group one included patients with nephropathy, retinopathy, and macrovascular diseases. Ophthalmological examination was carried out for all patients. Retinopathy was scored as proliferative and nonproliferative according to the Diabetic Retinopathy Study Research Group. Renal disease was diagnosed by microalbuminuria (30-300 mg/day) determined by using Konelab kit (Ilab 900/1800 test USA). Macrovascular disease includes CAD, strokes, and peripheral vascular disease. Echo color Doppler (Toshiba Power visinon 6000 – Japan, 4 MH^2 linear transducer) was used to investigate the presence of venous or arterial thrombosis. Coronary artery disease was determined by angiography in all patients. We excluded the patients with neoplastic and autoimmune diseases, antiphospholipid syndromes, which were using some drugs (namely, chlorpromazine, procainamide, hydralazine, penicillin), undergoing hemodialysis, from the study. Physical examination was carried out in all patients and body mass index (BMI) was considered from kg/m^2 ratio. Hematocrit, leukocyte and platelet counts, triglycerides (TG), total cholesterol (TC), high-density lipoprotein (HDL), low-density lipoprotein (LDL), very low-density lipoprotein (VLDL), fasting glucose, HbA1C, and creatinine were measured. Lipid samples were taken while hungry. Measurement of blood glucose, HbA1C, serum creatinine, TC, HDL cholesterol, and TG were measured colorimetrically with the Ilab 900/1800 test (USA). The VLDL cholesterol was found from measured TG/5, and LDL cholesterol was determined from total cholesterol – (HDL cholesterol + VLDL cholesterol). All sera were studied for aCL antibodies (IgG and IgM) by enzyme-linked immunosorbent assay technique (cut off point was 0.44). Blood specimens were centrifuged within 4 hours of the blood drawn, and the serum was immediately frozen and stored at -20°C for aCL analysis. In group one, the BMI was 30.14 ± 4.2 kg/m^2 and duration of diabetes was 11.4 ± 6.95 years. In group 2, BMI and duration of diabetes were 28 ± 3.39 kg/m^2 and 3.89 ± 1.77 years. The BMI was 26.14 ± 4.54 kg/m^2 in group 3. **Table 1** shows mean biochemical levels in all groups. The groups were similar from the point of age and gender, which is not statistically significant ($p>0.05$). In group one, duration of diabetes was higher than group 2 ($p=0.000$, $p<0.05$). Additionally, there were no statistical differences among mean levels of fasting glucose, TC, LDL, HDL, VLDL and TG in the all groups ($p>0.05$). Group one and 2 were significantly different from the point of HbA1C ($p<0.05$). The BMI was found significantly different among the groups ($p<0.05$). When the groups were compared with regard to BMI the difference was found significant in group one and 2, and group 2 and 3 ($p<0.05$). In group one, aCL IgG was positive in 9 patients (25.7%), in group 2, aCL IgG was positive in one patient (4.8%), and in

Table 1 - Characteristics of patients in 3 groups.

Levels	Group I X ± SD	Group II X ± SD	Group III X ± SD	Data statistics
BMI (kg/m^2)	30.14 ± 4.20	28.00 ± 3.39	26.14 ± 4.54	KW = 0.049
Fasting blood glucose (mg/dl)	230.71 ± 87.80	195.04 ± 81.28	195.71 ± 9.67	KW = 2.53
Hemoglobin A1c	10.36 ± 1.84	8.69 ± 1.53		$p = 0.002$
TC (mg/dl)	188.05 ± 51.58	191.85 ± 51.88	155.90 ± 43.42	KW = 0.05
LDL (mg/dl)	109.65 ± 43.43	105.14 ± 36.85	83.33 ± 34.67	KW = 0.04
HDL (mg/dl)	43.22 ± 15.28	43.90 ± 14.40	45.09 ± 18.45	KW = 0.33
VLDL (mg/dl)	33.37 ± 14.57	42.90 ± 40.15	28.57 ± 18.42	KW = 0.10
TG (mg/dl)	173.25 ± 74.82	213.38 ± 201.16	143.09 ± 91.97	KW = 0.17

BMI - body mass index, TC - total cholesterol, LDL - low-density lipoprotein, HDL - high-density lipoprotein, VLDL - very low-density lipoprotein, TG - triglycerides, KW - Kruskal Wallis

group 3, aCL IgG was positive in one patient (4.8%). There were significant differences between groups one and 2, group one and 3 for aCL IgG (p=0.047, p<0.05). However, there was no significant difference between groups 2 and 3 for aCL IgG (p=1.00, p>0.05). Positive aCL IgM was found in 2 (5.7%) patients of group one, in one (4.8%) patient in group 2. It was not found in group 3. The aCL IgM was not found statistically significant among all groups (p>0.05). In group one, 9 patients had positive aCL IgG, retinopathy, nephropathy, and macroangiopathy. While only one patient had positive aCL IgG (without retinopathy, nephropathy and macroangiopathy) in group 2. For aCL IgG, there was significant difference in 33 patients with retinopathy, compared with 23 patients without retinopathy (p=0.002 p<0.05). In the 33 patients with nephropathy, the aCL IgG positivity was higher than the 23 patients without nephropathy (p=0.002 p<0.05). Similar results were found in 25 patients with macroangiopathy for aCL IgG (p=0.004 p<0.05). In group one, aCL IgG positivity was found significantly higher than group 2 (p<0.05). There was no difference among gender, age, aCL IgG, and aCL IgM in all groups (p>0.05).

The predominant causes of morbidity and mortality of DM are microvascular and macrovascular complications.[1] Vascular disturbances and endothelial dysfunction are formed early in the duration of diabetic microangiopathy. Hyperglycemia pulls the trigger; vascular dysfunction, some biochemical incidents that cause early construction changes in vessel.[2] The aPL antibodies may play a role in the pathogenesis of DM. The beta 2 glycoprotein 1 ($ß_2$-GPI)-phospholipid complex is a novel epitope that stimulates the immune system to produce aPA. The development of such novel epitopes was found in type 1 diabetic mice, which also produced $ß_2$-GPI- dependent and independent aCL antibodies.[3] These findings have suggested that hyperglycemia causes an immunologic character for phospholipids. Generally, duration of diabetes and developing cardiovascular and other complications of diabetes shows parallel. We found the duration of diabetes higher in group one. A significant increase of mean aCL IgG levels was observed in patients with retinopathy. Goltier-Dereure et al[4] reported that they found aCL antibodies level increased in diabetic patients with macrovascular disease. We determined that aCL IgG posivity was higher in 25 patients with macrovascular disease than 31 patients without macrovascular complications. However, we did not find any significant correlation between aCL IgM and complications. Alagozlu et al[5] reported that aCL IgG increased significantly in the patients with diabetic foot, but aCL IgM levels did not increase in some patients. In our study, aCL IgG positivity was determined significantly high in the patients with retinopathy and nephropathy. There was a positive correlation with increased BMI and complications of DM. As a result, the clinical importance of aPA is uncertain in the patients of type 2 DM. High levels of aCL are associated with a thrombotic state and chronic complications of DM. Further investigation is required to determine the prognostic importance of aCL in complications of DM, and anticoagulation therapy (such as aspirin, low molecular heparin, clopidogrel) might be recommended as a prophylactic therapy.

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From the Department of Internal Medicine (Kal O, Gultekin), Department of Microbiology (Bakici) and the Department of Ophthalmology (Kal A), Faculty of Medicine, Cumhuriyet University, Sivas, Turkey. Address correspondence and reprint requests to: Dr. Fusun Gultekin, Department of Internal Medicine, Cumhuriyet University, Faculty of Medicine, Sivas, Turkey. Fax. +90 (346) 2191155.

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An audit of the management of adult patients with bronchial asthma in the Emergency Department

Haytham M. El-Khushman, *MD,*
Osama M. Halalsheh, *MD.*

Asthma is the most common chronic respiratory disorder among all age groups. Acute asthma is a common medical emergency. Attendance at a hospital emergency department (ED) indicates loss of asthma control and under treatment of asthma is relatively

common among patients presenting to hospital EDs. Reviews of asthma deaths indicate that 50-80% are preventable; particularly if patients initiate appropriate early self-management. There is a lack of statistical data concerning the demographics and other characteristics of Jordanian asthmatic patients. We conducted this study in order to characterize and define the asthmatic population who utilize ED services, and to audit the issue of basic asthma knowledge among patients and their treating physicians at the ED. The study was a prospective study conducted at King Hussein Medical Center (KHMC), a tertiary referral hospital in Amman, Jordan. Physician diagnosed asthmatic patients seeking unscheduled medical care at the ED over 12 months were included into the study. Three hundred acute asthma exacerbation patient visits were analyzed. Patients were included if they were within the age group of 15-70 years and had been diagnosed as bronchial asthma for the last 12 months prior to the entry into the study. Patients were excluded if they suffered from other medical illnesses for which they were seeking medical advice, or if a chronic obstructive lung disease was suspected. A pre-formulated questionnaire was designed to assess patients' basic knowledge of asthma and trained staff nurses at the ED collected the data. Questions were directed towards the following points: maintenance medications, differentiation between relievers and preventers, timing and regularity of Peak Expiratory Flow Rate (PEFR) recording and knowledge about spacers. Other questions were designed to assess asthma severity and patients understanding of self-management plans, such as the availability of PEFR meter and spacer devices at home. Hospital admission rates were calculated. Treatment plans postulated for the discharged patients were noted. History of previous hospitalization for an acute bronchospasm was noted. All patients were managed according to locally prepared guidelines, which were adopted from the British, and the American Thoracic Societies guidelines for management of acute severe asthma. Managing physicians were either internal medicine residents or family medicine practitioners working at KHMC. Males constituted 72% of the studied patients. Mean age (±SD) was 42.5 (±8.4) years. Seventy-eight percent of the patients were 30 years of age or older and only 9% belong to the age group (15-29 years). The mean (range) duration of physician diagnosed asthma in all subjects was 12.6 (2.5-26.2) years. Sixty percent of patients had a history of previous hospital admission for an acute severe bronchial asthma. Ten patients used a large volume spacer, and only 8 patients had a peak flow meter at home. The mean (range) time for acute asthma exacerbation symptoms before presenting to the ED was 5 (2-7) days. Forty percent of the patients were admitted to the hospital after unsatisfactory response following treatment at the ED. The rest showed a good clinical response and were considered safe enough to go home. The mean length of stay at the ED showed no statistically significant difference between hospitalized patients and those who were discharged home (p=0.3). There were 50 patients with more one visit accounting for 140 visits (48% of total visits). Most of those patients presented within 3 months from their initial visit. Most of the admitted patients were from the return visits group. Patients differ in their action toward their acute asthma symptoms before deciding to seek medical advice at the ED (**Table 1**). Out of the 300 patients visits, 290 (96.7%) patients relied on increasing doses of inhaled ß$_2$ agonist. Oral steroids were started in 6.7%, or increased before presentation in 20% of patients. Ten percent of the patients relied only on home nebulization treatment before presenting to the ED. Out of the 180 patients who were discharged home, 116 (64.4%) were kept on their same maintenance medications without changing dosages, 14 (7.8%) were asked to double there inhaled steroid dosage, 20 (11.1%) were asked to increase their oral steroids, and only 30 (16.7%) patients were started on a short course of oral steroids (**Table 1**).

Table 1- Actions taken before arrival to and upon discharge from Emergency Department (ED).

Variables	n	(%)
Patients actions before arrival to ED (n=300)		
Reliever frequency increased	290	(96.7)
Preventer dosage doubled or increased	30	(10)
Oral steroids started	20	(6.7)
Oral steroids increased	60	(20)
Home nebulized treatment used	30	(10)
Physicians actions for discharged home patients (n=180)		
Discharged on same maintenance medications	116	(64.4)
Inhaled steroid dose doubled	14	(7.8)
Oral steroid dose increased	20	(11.1)
Short course of oral steroids started	30	(16.7)
An appointment to the next asthma clinic scheduled	80	(44.4)

There are no available data describing various variables of acute bronchial asthma in Jordan. In our study, we provided evidence concerning the lack of knowledge among the asthma population presenting to the ED concerning their basic asthma management. We demonstrated that asthmatic patients presenting

to the ED lack the understanding of inhaled steroid preventive role in asthma management. Most patients are under treated for their level of asthma severity before presenting to the ED. A minority (2.5%) of patients knew how to perform a peak flow measurement and only 3% of the studied patients had an idea of spacer use. Several studies provided evidence that chronically poor asthma control leads to an acute crisis and under treatment of asthma is relatively common among any patient presenting to the hospital ED.[1,2] Gibson et al[3] followed asthmatic patients who presented to the ED for 8-12 weeks and found that only 20% of patients performing peak flow monitoring, inhaled technique was inadequate in one third of patients, and 33% of patients were judged to be under treated. In our study, almost half of the ED visits were due to repeated visits. This reflects poor asthma control among the same patients, which might be due to patients or physicians factors. In a study conducted by Garrettt et al,[1] reattendance within one week occurred in only 5% of cases, but reattendance after one month occurred among 22%. This provided an indication that while short-term management in the ED was effective, the higher relapse rate at one month suggested a deficiency in patient understanding or ongoing medical care. Several studies showed that asthmatic patients relied on using the reliever medications rather than depending on steroids for their acute exacerbations.[1,2,4] Wakefield et al,[4] in a study on south Australian ED asthmatic patients found that approximately 93% used relievers in the past month, but only 72% used preventers, and 26% of patients used oral steroids in the past month. Out of the 165 asthmatic ED attendees, only 32% had a spacer device and almost half of the study population had home nebulizer. In another study conducted by Hanania et al,[2] only 23% of ED asthma patients increased or initiated steroid therapy when attack is perceived. Our patients' results are far below the findings in the above studies. Most of the patients relied on increasing doses of the reliever treatment (96.7%) instead of increasing their inhaled steroids (10%) or using an oral steroid (26.7%). Anti-inflammatory treatment should be stressed upon as early as possible in the management of chronic asthma. In our study, only one fifth of the discharged home patients were advised to increase their inhaled or oral steroids treatment. Systemic steroids were started or doubled in approximately one forth of patients only. Two thirds of the discharged home patients were kept on their usual maintenance therapy, which either did not include or had low dose of steroids. This reflects the lack of awareness of the role of anti-inflammatory treatment in the management of acute asthma crisis in general among the treating physician. The managing physicians at our ED are either internal medicine residents or family medicine practitioners. The above findings emphasize the importance of stressing this information to the new generation of physicians hoping to decrease the severity and hospitalization rate of bronchial asthma. The implementation of action plans based on symptom or peak flow monitoring has been widely advocated for the management of asthma. Such an intervention, if effective, would seem to be clearly justified in those asthmatics that have severe asthma exacerbation that requires urgent treatment.[2,5]

In conclusion, we tried to characterize asthmatic patients who presented to the ED at the biggest tertiary referral hospital. Our findings clearly defined the significant under treatment of asthma generally, and acute severe asthma particularly. It also emphasizes the deficient knowledge among asthmatics regarding their disease. These indicate that a comprehensive team for asthma management is needed. We stress upon the need for asthma clinics, and the need for continuous medical education programs directed to the treating physicians who deal with asthma patients in order to improve bronchial asthma management practice.

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From the Respiratory Medicine Division (El-Khushman) and the Emergency Department (Halalsheh), King Hussein Medical Center (KHMC), Amman, Jordan. Address correspondence and reprint requests to: Dr. Haytham El-Khushman, PO Box 2399, TLA Al-Ali, Amman 11953, Jordan. Tel. +962 777412755. Fax. +962 (6) 5854566. E-mail: helkhushman@hotmail.com

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Correlation between CT scan and antroscopic findings in lesions of the maxillary sinus

Nemer Al-Khtoum, MD.

The maxillary sinus is a pneumatic cavity of the facial skeleton within maxillary bone; it has a quadrangular pyramid form with an internal base. The maxillary sinus fluids drain into the nasal cavity by a narrow ostiomeatal complex, with obstruction of the outflow causing sinusitis, mucosal thickening, and polyps or retention cyst formation.[1] Also, it can be affected by other lesions in the face such as tumors, but its clinical access is difficult, and radiographic examination is considered to be very helpful in the better clarification of those diseases. The imaging of sinus pathology, both benign and malignant, has undergone radical changes from the era of plain film radiography. The current application of high-resolution CT to this anatomic region has benefited patients, reduced unnecessary surgery, and allowed the introduction of a whole new surgical technique into common use. The CT is currently the modality of choice in the preoperative evaluation of the nose and paranasal sinuses, and is the gold standard for precise delineation of inflammatory sinus disease secondary to obstruction of the ostiomeatal complex. The benefit of CT is its ability to be used as a surgical roadmap when a nasal endoscopic approach is to be used. The endoscopists have moved outside the realm of chronic sinus inflammatory disease, and now routinely approach acute inflammatory disease and its sequelae with primary endoscopy. Antroscopy allows full inspection of the diseases in the sinuses. Biopsies can be taken and specimens for culture and sensitivity can be obtained. It also allows for photographic documentation. After an informed written individual consent was taken, 54 patients presented to the Department of Otorhinolaryngology, Royal Medical Services, Jordan, with chronic nasal symptoms, suspected of having maxillary sinus pathology, underwent both radiological and antroscopic investigation of their maxillary sinuses. The age of patients ranged from 15-57 years with mean age of 29.64 years. Out of 54 patients, 36 were male, while 18 were female. All these patients underwent a detailed history taking and a through general examination, systemic examination, and were screened for clinical and radiological evidence of maxillary sinus lesions. A CT scan of nose and paranasal sinuses (axial and coronal sections) was carried out in 54 patients (90 sinuses), and findings were noted and classified as normal, mucosal thickening, cyst, antral polyp, total opacification, and opacification with bony destruction. The time duration between CT scan, and antroscopy was not more than 10 days. Under local anesthesia, antroscopy was performed through the canine fossa route. This was carried out as an outpatient procedure in all the patients, and a total of 90 sinuses were examined, findings were noted and classified as normal, congested and edematous mucosa, polypoidal mucosa, cyst, polyp and malignant tumor. Radiological and antroscopic findings were then compared **Table 1**. The percentage of agreement between CT and antroscopy were found to be 95.6%. The incidence of complication with antroscopy was very low. Anaesthesia and swelling of face and cheek for 2-3 days was the only complication seen (2.3%). Vasovagal attack was encountered in 3 cases. Antroscopy provides accurate information about the nature of mucosal changes, the presence of secretions, and the state of the natural ostium. This technique therefore ensures a precise diagnosis on

Table 1 - Comparison of computerized tomography scan and antroscopic findings in 90 maxillary sinuses.

Computerized tomography findings	Antroscopic findings					
	Normal	Congested and edematous mucosa	Polypoidal mucosa	Polyp	Cyst	Malignant tumor
Normal (n=23)	23	0	3	0	0	0
Mucosal thickening (n=15)	0	0	15	0	0	0
Cyst (n=15)	0	0	0	0	15	0
Opacity without bony destruction (n=30)	0	9	12	9*	0	0
Opacity with bony destruction (n=7)	0	0	0	4†	0	3

*Antrochoanal polyp, †indicate that computerized tomography scan has given incorrect information.

which appropriate primary treatment can be based as well as offering the most reliable means of selecting patients who require surgery. In our study, there was a high correlation between the CT findings and findings found in antroscopy. Normal sinus CT scan was noted in 23 (25.6%) sinuses, which correlates 100% with antroscopy. Mucosal thickening was correctly predicted in 100% cases on CT examination. The CT examination was perfectly reliable as far as mucosal thickening was concerned. However, a previous work had found mucosal thickening as an incidental findings on CT examination.[2] Total opacity on CT scan had a predictive accuracy of 100%, but the same fell to 43% for opacity with destruction of posterior wall, which is considered to be pathognomic of sinus malignancy.[3] On antroscopy, 4 cases proved to be an antrochoanal polyp. Many authors have found a high rate of mucosal thickening and opacification on CT in asymptomatic adults and children.[4] Cysts were also an excellent sign on CT examination (predictive accuracy-100%, diagnostic accuracy - 100%). This had been observed previously by Stammberger and Hawke.[5] From the present study, we conclude that antroscopy is the most useful investigation in the management of chronic conditions of the maxillary sinus. The CT findings completely correlated with the antroscopic findings in 95.6% of the cases. The CT-based films can be used in study and in attendance of clinical cases in all their phases as treatment planning, and a follow up of cases.

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From the Department of Otolaryngology, Royal Medical Services, Amman, Jordan. Address correspondence and reprint requests to: Dr. Nemer Al-Khtoum, PO Box 1834, Amman 11910, Jordan. E-mail: nemer72@gmail.com

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Reviewing the correspondence section in the Saudi Medical Journal 2000-2004

Mustafa Afifi, *MMed, DrPH.*

Scientific discourse occurs in many forms among colleagues, at scientific meetings, during peer review and after publication. Such discourse is essential to interpreting studies and guiding future research. The letter section of a scientific journal is an essential part of post publication peer review.[1] Many readers seem to assume that articles published in peer reviewed journals are scientifically sound, despite much evidence to the contrary. It is important, therefore, that misleading work be identified after publication.[2] Through the letters, scientific articles published are subject to continuing scrutiny. Letters also document discussions and debate. Moreover, it helps make a journal accountable to the scientific community.[3] Therefore, journals welcome and encourage the submission of letters to editors.[1] There are mainly 2 categories of letter to editor; the critical letter which provides a forum for readers to comment regarding articles recently published in the journal and research letter, which reports concise research.[1] The aim of this work was to conduct a descriptive retrospective bibliometric study, where the correspondence section over a 5 year period starting 1st January 2000 to 31st December 2004, in the Saudi Medical Journal were reviewed and analyzed. A PubMed search on the total number of publications and percentage of letters to editors, brief communication and correspondence from it in the Saudi Medical Journal was carried out. A search strategy was performed by including the name of the Saudi Medical Journal, and letting it be directed to PubMed within a single hour limit (December 11th 2005). The PubMed search was limited for the 5 years starting January 1st 2000 to December 31st 2004 to get the total number of publications in the journal, and then further limit the search to "Letter" as a type of publication. The search strategy was as follows: "Search Saudi Medical Journal[ta] Field: All fields, limits: Publication Date from 2000/01/01 to 2004/12/31, Letter".

The PubMed search revealed that the Journal published 1824 articles over the studied period, of them 141 were considered as "Letters". These 141 letters summed only the "Letter to editor" section that represents research letters and "Correspondence" section that represents critical letters in the journal. However, by reviewing the hard copies of the journal we found 171 "Brief communication", 84 "Letter

to editor", and 85 "correspondence". From October 2002, the "Letter to editor" section was changed to "Brief communication" section, which was no longer considered as "Letter" in PubMed. Yet, the sum of "Letter to editor" and "Correspondence" totaled 169 from the hard copy, and the discrepancy between this figure and the 141 "letter" showed in PubMed search would be discussed in a future study. In the current study, only the data of the 85 critical letters in the correspondence section over the studied 5 years was reviewed and analyzed.

The critical letters in the correspondence section constituted 4.7% of the overall publication over the studied 5 years. Despite the number of publications increasing from 279 in 2000 to 529 in 2004, the number of letters in the correspondence section did not increase significantly or proportionately. To these 85 letters, 19 authors of the original study declined to reply (22.4%). It was found that 18.8% of the letters had only a single author in PubMed. Although 56.5% of letters in the studied period in PubMed have 2 authors, those letters were basically submitted by a single author. The second author in these letters was the replying author as the Saudi Medical Journal adopted the policy of including the original author reply in the same column of correspondence, and adding the name of the replying author in PubMed. That means that 18.8% plus 56.5%, which equal almost three fourths of the published letters, were originally submitted by a single author. It was meant here to highlight this point because not all journals adopted the same policy for adding the replying author after the letter author in PubMed. Of the first 3 authors- if there- in every letter, 15.3% wrote more than one letter, and 4.2% wrote 4 letters as a maximum. Both the letter author(s) and the replying author(s) partially agree with each other in almost all the publications. However, change in the original study was only established according to what the critical letter raised in only one publication. The number of references in all letters ranged from 1-28 with a mean of 5.95 (SD = 4.4). Approximately 33% of the letter authors quoted themselves in their letters with no statistical difference between single authored or multiple authored letter. The duration between publishing the letter and date of publication of the original study ranged from 4-21 months with a mean of 8.54 (SD=3.3). A significant association between decline to reply to the letter and longer duration was found where only one author declined to reply in duration <=6 months compared with 18 authors declined to reply in case of duration >6 months (Likelihood ratio Chi squared = 7.47, p=0.016) (**Table 1**). The mean duration of publication for the replying authors was also significantly shorter than those declined to reply (8.1 month, 9.9 month respectively, F= 4.55, p=0.03). The most common reasons for writing critical letters were to add new information, raise new issues, or point out that discussion did not explain results or criticize conclusion reached. Less than 5% of the letters criticize statistical analysis or require appropriate one (**Table 1**).

Table 1 - Correspondences published in the Saudi Medical Journal 2000-2004.

Variables	Results
Number of correspondences	85
The mean (SD) number of references in all letters	5.95 (4.4)
Percentage of authors quoted themselves in their letters	33%
The mean (SD) duration in months between publishing the letter and publishing the original article	8.54 (3.3)
Number (%) of authors of original articles declined to reply	19 (22.4%)
Number (%) of authors of original articles declined to reply if duration >6 months	18 (21.2%)
Reasons for writing the critical letter	**N (%)**
1. scrutinize flaw in methods	14 (9.2)
2. raise new issue(s)	28 (18.3)
3. add new information	34 (22.2)
4. criticize statistical analysis or require appropriate one	7 (4.6)
5. provide alternative interpretation	8 (5.2)
6. discussion did not explain results or criticize conclusion reached	25 (16.3)
7. pose important question(s)	18 (11.8)
8. give his own or country experience	15 (9.8)
9. fully agree with original author	4 (2.6)
Total	**153 (100)**

This study is considered the first to review and analyze critical letters in one of the prestigious and esteemed regional journals in the Middle East. The current study also highlights the important issue as percentage of decline to reply, duration for publication, percentage of authors with more than one letter during the studied period in the Saudi Medical Journal and the most common reasons to write a letter. To err is human, and writing critical letters are not like spinal cord reflexes. It needs reading the original study several times and digesting it before criticizing it. That ensures thorough reading of articles of interest. Mayberry[4] stated that any editor is glad to know that his or her journal is being read and that articles have prompted a response. Only a small percentage of the authors in the current study had more than 1-4 letters published during the studied 5 years in the

Saudi Medical Journal. Mayberry[4] investigated it in a different way that makes the comparison difficult. He examined the publication history of letter writers and found that 30% of authors reviewed over 18 months period published 5 or more letters, and 13% more than 10 letters. His reviewed authors quoted themselves in 44% of letters, raising to 75% in the case of single authored letter, whereas only 33% of the authors did that in the current study with no difference in case of single authored letters. Reviewing correspondence in the Dutch Journal of Medicine by Mahesh et al[5] over almost one year established that a mistake was revealed in 8 (4.1%) of the 196 letters reviewed. Six of these reactions led to the publication of a "Correction" to 3 articles. In the current study, an editorial reaction to a letter leads to publication of correction. The majority of letters in the current study criticize the original study except for only 4 letters. Winker and Fontanarosa[1] in JAMA stated that letters that simply applaud the author's work generally are not published because letters are not a vote on article's merits. The most common reasons for writing letter in the current study were similar to what Casewell[6] mentioned in his study in the Medical Journal of Australia. The noteworthy finding in the current study is that less than 5% of letters scrutinize statistical analysis or required appropriate one. Altman[2] discussed that serious statistical errors are not uncommon and mentioned that statistics have become more complex and there is evidence of frequent misapplication of newer advanced techniques.[2]

Finally, I wish to discuss the delay between publication of articles and their critical letters. Such delay interferes with the educative importance of the letters, which in turn alters the significance of the article to non-expert readers. However, the process of receiving the letter, screening, peer reviewing, sending to the author of the original study, waiting for his response, editing, administration of galley proofs would take 3 months.[7] Added to that the limited size of the correspondence column and increase number of letters from expert readers or those feel urge to opine on any given topic despite having little of interest to say. To overcome the delay in letter publications international journals set either time limitations for submission, word limitation for processing and number of letters accepted or limitation to the way of submission.[7] However, some authors viewed that time limitation on correspondences denies readers the opportunity to draw attention to methodological deficiencies.[2] Maybe launching e-letters' service would solve this dilemma of delay where comments would be posted at the discretion of the editors, who should apply liberal policy in screening, yet censor abusive, libelous, redundant, or extremely tangential comments.

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From the Department of Research and Studies, MOH (HA), Muscat, Sultanate of Oman. Address correspondence and reprint requests to: Dr. Mustafa Afifi, Department of Research and Studies, MOH (HQ), PO Box 393, P.C 113, Muscat, Sultanate of Oman. Tel. +968 (9) 9035672. Fax. +968 (246) 95480. E-mail: afifidr@yahoo.co.uk

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School absenteeism in boys with hemophilia

Emel Eksioglu, *MD,* ***Eda Gurcay,*** *MD,* ***Ustun Ezer,*** *MD,* ***Reyhan Tuncay,*** *MD,* ***Aytul Cakci,*** *MD.*

Hemophilia is a congenital blood defect consisting of a partial or total absence of clotting factor VIII (hemophilia A) or factor IX (hemophilia B). It is classified according to factor levels. In severe hemophilia, factor level is below 1%, in moderate hemophilia it varies between 1-5%, and in mild hemophilia from 5-25%. The most common clinical manifestation of hemophilia is hemarthrosis leading to chronic arthropathy.[1] Few data have been published on school functioning in children with hemophilia. Frequent spontaneous hemorrhages predispose a child to particularly high rates of school absence or poor school achievement. The cultural level of the family also influences the education and medical care of these children.[2,3] Secondary social and psychological problems, that in some instances result in school failure, have been described as affecting as many as 30% of children suffering from different types of

chronic illnesses.[2] The social aspects of the illness must be recognized in conjunction with attending to the medical needs of hemophilic patients.[3] We investigated the educational status of 27 boys with hemophilia aged between 7-18 years, in order to assess their school attendance and the handicap of hemophilia on education.

Twenty-seven boys with hemophilia, between the ages of 7-18 years, referred for rehabilitation to our Physical Medicine and Rehabilitation Outpatient Clinic from the Pediatrics Clinic, were included in this study. A total of 59 involved joints of all patients were examined. The patients were classified according to their factor levels (severe, moderate, and mild).[1] A brief interview regarding disease history was conducted with the parents of the hemophilic children. In order to determine the handicap of hemophilic arthropathy on education, we recorded the educational status, make-up examination results and school failure due to hemophilia, as well as mean absenteeism period for each previous educational year (<1 month, 1-4 months, >4 months) for all patients. School absenteeism caused by factors other than hemophilia was excluded from evaluation. Twenty-five of the patients were currently enrolled in school, and 2 were unable to attend school due to hemophilia. The number of involved joints was recorded for each patient. The bleeding score, developed in 1983 by the Musculoskeletal System Committee of the World Federation of Hemophilia, was accepted as a standard and applied to all patients.[4] Data were evaluated by SPSS 9.01 statistical program. When the normality assumptions did not hold, the value and direction of the relation between variables were investigated using Spearman's correlation coefficients. Results are given as mean and percentages; $p<0.05$ values were accepted as statistically significant. The mean age of the children was 13.04±3.54 years (range 7-18 years), the mean disease age of the patients was 11.8±3.76 years (range 5-18 years) and the mean number of involved joints was 2.12±1.09 (range 1-5). Of the 59 involved joints, 35 (59.3%) were knee, 15 (25.4%) were elbow and 9 (15.2%) were ankle joints. Of the 27 boys included in the study, 22 were diagnosed as hemophilia A, and 5 as hemophilia B. The severity of hemophilia was classified as mild (3 patients), moderate (20 patients) or severe (4 patients) according to the factor levels. Of the 25 patients in primary school, high school or university, 6 (24%) had a history of make-up examination and 5 (20%) had school failure. Two patients were unable to attend school due to hemophilia. In our study group, we established a positive correlation between the number of involved joints and absenteeism (r=0.440, p=0.028, $p<0.05$). Effects of hemophilia severity due to factor levels on school absence are assessed in **Table 1**. Although it did not reach a significant level, there was a negative association between the factor levels and absenteeism (r=-0.378, p=0.063, $p>0.05$), suggesting that when factor levels increase, absenteeism tends to decrease. We established that an increase in joint bleeding episodes caused a subsequent increase in missed school days (r=0.405, p=0.045, $p<0.05$). Though rates vary between countries, the incidence of hemophilia is reported as one in 10,000 males. If the bleeding episodes are not adequately treated, disability, handicap or even death can occur.[1] Chronically ill or handicapped children, such as hemophiliacs are vulnerable to a variety of psychological, social and academic challenges. These children are at increased risk for school dysfunction and absenteeism. Although the absentee rates are not known in our country, a wide range of absentee rates is reported in the literature.[2,3,5,6] Overall, children with hemophilia miss more school days than their healthy peers. In order to define the handicap of our patients due to hemophilic arthropathy, we evaluated their educational status during the childhood period. All of the 25 patients enrolled in primary school, high school or university had lost school days. We found a weak correlation between the factor level and absenteeism. This may have been a result of the unequal distribution of the patients in the mild, moderate and severe hemophilia groups. We established that absenteeism increased with the number of involved joints and frequency of bleeding episodes, and this was not surprising. More involved joints, and a greater frequency of bleeding episodes can cause more missed school days. In this study, absenteeism was 100%. The lower extremity was the most commonly affected joint, with a ratio of 75%. It is possible that this involvement restricted mobility and caused the missed school days. Two of our patients were never able to attend school due to hemophilia. If it had been possible to determine the number of patients leaving school over an extended period of follow–up, different results may have

Table 1 - Absenteeism according to disease severity.

Disease severity	<1 month	1-4 months	>4 months	Total
Severe	1	2	1	**4**
Moderate	6	10	2	**18**
Mild	3	-	-	**3**
Total	**10**	**12**	**3**	**25**

been obtained. In Ramgren's study,[5] 235 patients with mild, moderate and severe hemophilia were included, and the effects of hemophilia on social life were investigated. According to the results, 44% of severe hemophiliacs, 77% of moderate hemophiliacs, and 96% of mild hemophiliacs could attend school regularly. It was noted that 58% of severe, 78% of moderate, and 92% of mild hemophiliacs obtained a primary school diploma, and that 23% of them could not complete their education due to hemophilia.[5] Psychosocial adjustment of hemophilic boys and their families were evaluated by Mattsson and Gross.[3] They concluded that they were performing at an average or above average level in school. Olch[6] reported that intelligence appeared to be minimally affected by the disease, but the academic performance of hemophilic boys was generally below their intellectual abilities. Moreover, 33% of these children missed 25% of each school year. Woolf et al[2] determined in their study, that boys with hemophilia missed 18 days per year.

In this study, we present a small cohort study about the handicap of hemophilia on education. The challenge of ensuring education for hemophiliacs, together with their healthy peers is a continuous process. The major goals are to facilitate school achievement and to improve their quality of life. In developed countries, the importance of hemophilic arthropathy was accepted nearly 50 years ago, and the psychosocial and socioeconomic aspects of the disease have been investigated in detail. These previous studies have guided the programs that exist on treatment and social adjustment of hemophilic patients. More comprehensive treatment systems, which are concerned with the psychosocial aspects of the disease have been developed, and special education centers offer opportunities for continuing education.[3,5,6] We hope that through these means, patients will cope effectively with their illness, enabling them in time to contribute to society as productive members rather than being excluded from it. With a multidisciplinary approach and early treatment interventions, an impaired education might be prevented and subsequently the education level of the population could be increased. The relation of psychological, social and education factors on the school adjustment of children with chronic disease such as hemophilia requires further investigations. These studies will guide efforts to reduce the school-related problems of hemophiliacs and facilitate improvement in their life quality.

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From the Department of Physical Therapy and Rehabilitation (Eksioglu, Gurcay, Tuncay, Cakci), Department of Pediatric Hematology (Ezer) Ministry of Health, Ankara Diskapi Yildirim Beyazıt Education and Research Hospital, Ankara, Turkey. Address correspondence and reprint requests to: Dr. Emel Eksioglu, 57. Sokak 3/7 06510 Emek, Ankara, Turkey. Tel. +90 (312) 4189070. Fax. +90 (312) 4184088. E-mail: emeleksioglu@yahoo.com

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The comparative study of refractive errors between carpet weavers and blue collar workers

Siamak Akbarzadeh, *MD,* ***Morteza Samavati,*** *MD.*

Myopia is considered as one of the most concerns of current societies and its incidence has been increasing during recent decades.[1] It also spreads across Asian urban areas more than the rural non Asian reigns.[2] In the etiology of myopia, 2 theories of inheritance and environmental factors are basically mentioned.[2,3] In the field of environmental factors, agents such as near work, light night, degree of education, intelligence, and even economy status along systemic diseases are pointed out.[3,4] According to the previous studies, the incidence of myopia figures approximately 17.2-21.8%.[5] The present study is based on the mentioned facts for survey of the probable risk factors of myopia and its etiology between the blue collars and carpet weavers.

This is a retrospective cohort study of 319 workers (188 carpet weavers and 131 blue collars workers). Blue collars were the service workers who did not do delicate jobs such as studying, and they were chosen from Hamedan Medical University, likewise the randomly selected carpet weavers were from the suburb of Hamedan handicraft industries office. The overall mean age was 18-40 years. Weaver who worked 6 hours daily for 4 years were included in this study. We randomly picked 131 qualified blue collars workers. Individual suffering from any kinds of eye

Table 1 - Frequency distribution of the eyes status with drop among 2 groups studied-based on the normal criterion of ± 0.50.

Eye	Group	Eye status			χ^2	*P*-value
		Hyperopic n (%)	Emmetropic n (%)	Myopics n (%)		
Right	Carpet weaver	36 (19.1)	87 (46.3)	65 (34.6)	16.84	<0.001
	Blue collar	50 (38.2)	37 (28.2)	44 (33.6)		
Left	Carpet weaver	37 (19.7)	81 (43.1)	70 (37.2)	11.55	0.003
	Blue collar	50 (36.6)	37 (32.1)	44 (31.3)		

diseases such as glaucoma, cataract, keratoconus, and retinopathy, and any kinds of near-work history were excluded from the study. According to α=error of 5% and ß=error of 20%, the minimum of the blue collars were 120, and by considering the least sampling method, the number of the carpet weavers were estimated approximately 180. The selected people in each group were examined for the cycloplegic and dry refraction, then the keratometry and biometry were carried out. The number of carpet weavers were mostly female (184 women versus 4 men), but the number of blue collars were mostly male (36 women versus 95 men), and the difference between them was considered significant ($p<0.05$). The average age of the carpet weavers was 33.53 and 32.33 among the blue collars, which not statistically significant ($p=0.166$). The standard deviation was 8.05 for the carpet weavers and 7.67 for the blue collars. The environmental light was adequate for 93% of the carpet weavers, and 98% of the blue collars and there was a significant difference with each other ($p<0.05$). The average refractive error of the carpet weavers' right eye with cycloplegic drop was -0.57 Diopter (SD = 1.95), and among the blue collars was -0.12 Diopter (SD = 2.06), which distinguish a significant difference ($p=0.027$). The average refractive error of the carpet weavers' left eye with cycloplegic drop was -0.45 Diopter (SD = 1.53), and among the blue collars was -0.10 Diopter (SD = 2.02), which distinguish a significant difference ($p=0.042$), but dry refraction between 2 groups had no significant differences. The average axial length of the carpet weavers' right eye was 22.75 mm (SD = 0.98) and among the blue collars was 22.53 mm (SD = 1.72) ($p=0.078$). The average axial length of the carpet weavers' left eye was 22.72 mm (SD = 0.90), and among the blue collars was 22.43 mm (SD = 2.27) ($p=0.058$). The average refractive power of the carpet weavers' cornea of the right eye was 44.67 Diopter (SD = 2.17) and was 44.00 Diopter for the blue collars (SD = 1.46) ($p=0.001$). The average refractive power of the carpet weavers' cornea of the left eye was 44.43 Diopter (SD = 2.94), and was 44.03 diopter for the blue collars (SD = 1.60) ($p=0.08$). Based on **Table 1**, the percentage of the cycloplegic refractive errors between both groups was not the same ($p<0.05$), and on cycloplegic refraction of the left and right eye of the carpet weavers, the percentage of the myopic people was more than the hyperopics. But among the blue collars, the percentage of the hyperopics was more than the myopics. According to the emmetropization theory (the defocus theory) there is a mechanism in human and animals, which tends the eye to have clear image on retina and for people who always have near work, images lie behind the retina. Then, the axial length extends so that the image would forms on the retina. This leads the person to be myopic (this mechanism probably lies inside retina). In our study, the environmental light for the carpet weavers was improper than the blue collars. And it seems that improper lighting during near work could lead to myopia. It was proved that the age of man affects the refractive status of the eye. Due to having no meaningful difference of the age between 2 groups, this parameter played no role. In this study, the average refractive error of right and left eyes without cycloplegic drop between 2 groups was pretty the same, but by applying the cycloplegic drop, the average refractive errors of right and left eyes of the carpet weavers tends to reach myopia with a meaningful difference. As a result, it could be reasoned that the blue collars have greater accommodative power than the carpet weavers; second, the trend to myopia among the carpet weavers is more than the latter. This finding matches the others' researches on the near work and myopia.[3,4] In our study, the average axial length of right and left eye among the carpet weavers was more than the blue collars, eye and the average corneal refractive power among the carpet weavers is more than the latter. The aforesaid findings can lead to the assumption that the long near work may result in the corneal refractive power increase.

In conclusion, cycloplegic refractive errors between carpet weavers and blue collars are different, so carpet weavers are myopic and blue collars are

hyperopic. This might be resulted from near work with insufficient light in the environment of carpet weavers.

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From the Department of Ophthalmology, Hamedan University of Medical Sciences, Hamedan, Iran. Address correspondence and reprint requests to: Dr. Asst. Prof. Siamak Akbarzadeh, Eye Department, Zip Code 65166 6 3971, Hamedan, Iran. Tel. +98 (918) 8119125/8242122. E-mail: siakbarzadeh65@yahoo.com

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Errata

In manuscript "Significance of anti-glomerular basement membrane antibodies in type 2 diabetic patients" Saudi Medical Journal 2005; Vol. 26 (11): 1734-1736, the meaning of DN in Table 1 legend should have appeared as follows:

DN - diabetic nephropathy

In the October 2002 (vol. 23, no. 10, 1214-1221) issue of Saudi Medical Journal an article was published by Muhammad Saeed, Khalid R. Murshid, Amin A. Rufai, Salah E. Elsayed, Muhammad S. Sadiq entitled <Sternalis. An anatomic variant of chest wall musculature>. Both Figure 1 and Table 1 drew extensively on material published in an article by Jelev L, Georgiev G, Surchev L, The sternalis muscle in the Bulgarian population: classification of sternales, published in the Journal of Anatomy (vol. 199, no. 3, 359-363, 2001), without permission and due acknowledgment.

The Editors of Saudi Medical Journal and Drs. Saeed, Murshid, Rufai, Elsayed, and Sadiq wish to apologize unreservedly to Drs. Jelev, Georgiev, and Surchev, and the Journal of Anatomy.