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#### Chief Editor:

Abdulrazak Abyad MD, MPH, AGSF

Email: aabyad@cyberia.net.lb

#### Assistant to the editor:

Ms Rima Khatib

Email: Rima@amc-lb.com

#### Reporter and photographer:

Dr Manzoor Butt

Email: manzor60@yahoo.com

#### Publisher:

Ms Lesley Pocock

medi+WORLD International

572 Burwood Road,

Hawthorn, Vic Australia 3122

Phone: +61 (3) 9819 1224:

Fax: +61 (3) 9819 3269

Email: lesleypocock@mediworld.com.au

#### Editorial enquiries:

aabyad@cyberia.net.lb

#### Advertising enquiries:

lesleypocock@mediworld.com.au

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This issue of the journal is rich with various papers from the region. In a paper from Turkey the authors compared ECG Interpretation Skills of Family Physicians with Internists and Untrained Physicians. Although some groups achieved better in ECG interpretation, and family physicians are in an intermediate place of the spectrum, average scores of all groups are below acceptable levels. In conclusion there is a need to improve the ECG interpretation skills of medical undergraduates.

A study from Dubai reports on the efficacy of chlorhexidine mouthwash as an oral antiseptic. This was an *in vivo* study that demonstrated a reduction in bacterial colonies in patients using chlorhexidine. The authors concluded that the use of this agent may be recommended routinely as a preprocedural protocol prior to performing any dental or oropharyngeal procedures and also may be effectively prescribed as an adjunct to other conventional therapies for oral, oropharyngeal, and upper respiratory tract infections.

In a well-designed study Dr Al-Khtoum et al, reported on the correlation of Rhinosinusitis with Bronchial Asthma. In one hundred cases of bronchial asthma patients studied, 58 (58%) of patients had symptoms and signs suggestive of sinusitis, whereas CT scan detected sinusitis in 78 (78%) patients. In conclusion, the association of sinusitis and asthma seems to be more than an epiphenomenon. All asthmatics need to be examined for evidence of sinusitis preferably by CT scan.

The importance of Complementary and Alternative Medicine Training in Medical Schools was discussed in a paper from Turkey. The authors stressed the importance of complementary medicine. The study revealed that half of the residents and Professors agree that it should be taught.

Facial pain, is a common clinical condition, usually missed by clinicians as a psychosomatic disorder. A series of twenty patients were reported from the Royal Medical Services of the Jordanian Armed Forces. Myofascial pain dysfunction syndrome is a psychosomatic disorder that lacks any criteria to be considered as an organic disease and so our management should be based on this fact.

A paper on the methods of management in hospital of Shiraz University of Medical Sciences discussed the development of a suitable pattern. The author stressed the importance that hospital managers utilise confirmed theories of leadership styles to improve the services offered to patients. Improving the quality of leadership could, therefore, have a direct effect on job satisfaction of the personnel, leading to increased quality of services offered to patients. The findings of this study point to the requirement for new management courses for health-and-treatment- service- related fields, hence training of well-organized managers.

I would like to thank the editorial board and the reviewers for their efforts in making this year a successful one. I would like as well to thank the production team headed by Ms. Lesley Pocock, for an excellent job and tremendous support. This year was a big jump for the journal and I would like to mention that we accepted some articles during the year, that may not necessarily meet the required standards, to encourage and support research and clinical review in the region. I would like to mention as well that the award for MEJFM Family Doctor of the Year will be announced in the First Annual Primary Care Conference in Abu Dhabi, in January 2006.

**Dr Abdulrazak Abyad**  
*Chief Editor*

# Correlation of Rhinosinusitis with Bronchial Asthma

Dr. Nemer Al-Khtoum, MD

Department of Otolaryngology, Royal Medical Services.

Dr. Amin Al-Qudeh

Department of Medicine, Royal Medical Services

**Correspondence:** Dr. Nemer Al-khtoum Department of ENT, RMS, Jordan Armed Forces Amman, Jordan , PO Box Sweileh 1834, Email: nemer72@gmail.com

## ABSTRACT

**Objective:** To evaluate the predisposition of sinus involvement in asthmatic patients.

**Patients and Methods:** One hundred cases of bronchial asthma patients of either sex were studied. Age of patients ranged from 18-60 years with mean age of 33.67 years. CT scan of paranasal sinus was performed for all patients.

**Results:** 58 (58%) patients had symptoms and signs suggestive of sinusitis. The most common symptom was nasal congestion found in 52 (52%) patients. CT Scan PNS showed evidence of sinusitis in 78 (78%) patients whereas 22 (22%) patients had no evidence of sinusitis. Maxillary sinusitis was found in 78 (78%) patient, and 52 (52%) patients had frontal sinusitis. Ethmoid sinusitis was seen in 22 (22%) patients and 8 (8%) patients had sphenoid sinusitis. Maxillary polyp was found in 22 (22%) patients and ostiomeatal complex block in 54 (54%) patients. Among one hundred patients of bronchial asthma, clinically 58 (58%) patients had evidence of sinusitis whereas CT scan detected sinusitis in 78 (78%) patients.

**Conclusion:** The association of sinusitis and asthma seems to be more than an epiphenomenon. All asthmatics need to be examined for evidence of sinusitis preferably by CT scan.

## INTRODUCTION

The association between sinusitis and asthma has long been appreciated. The incidence of sinusitis in asthmatic subjects is generally stated to range from 40% to 75%.<sup>1-7</sup> Although these studies strongly suggest that sinusitis triggers or worsens asthma, it could be argued that they merely coexist and represent different end products of the same process (inflammation) occurring in different organ systems.

Perhaps the most direct evidence of a cause-and-effect relationship has been provided by studies that show that appropriate treatment of sinusitis by medical intervention can result in significant improvement of asthma symptoms.<sup>8-10</sup> Additionally, sinus surgery in patients with asthma has been shown to bring about improvement in lower airway disease, although adequate controls have not been incorporated in most studies.

Hypotheses are forwarded that upper and lower airways need to be considered as different stages of unique entity influenced by common mechanisms in the inflammatory process. Sinusitis and asthma therefore, are considered as manifestations of one disease process. The aim of the present study was to know the incidence of sinusitis in asthmatic populations, and to compare the relevant

findings pertaining to sinus involvement obtained by clinical and radiological studies.

## MATERIAL AND METHODS

The sample of this study was conducted in the period from March 2003 to April 2005, in the Department of Medicine, royal medical services (Amman-Jordan).

After institutional ethical committee clearance and written informed consent one hundred cases of bronchial asthma patients of either sex were studied. Age of patients ranged from 18-60 years with the mean age of 33.67 years.

Asthmatic patients were selected as per the guidelines advocated by the American Thoracic Society in 1995.<sup>11</sup> All these asthmatic patients underwent a detailed history taking and a through general examination, systemic examination and were screened for clinical and radiological evidence of sinusitis. CT scan of paranasal sinus was performed for all patients.

The clinical criteria for diagnosing sinusitis were the presence of:<sup>12</sup>

- (1) Nasal congestion/stuffiness,
- (2) purulent rhinorrhoea,

- (3) postnasal drainage,
- (4) Local pain and tenderness overlying the sinuses,
- (5) Night cough,
- (6) Unpleasant smell, or taste (Fetor oris).

CT criteria for the diagnosis of sinusitis was the presence of:<sup>13</sup>

- (1) Mucosal thickening > 6 mm in children and > 8 mm in adults,
- (2) Indistinct bony margins,
- (3) Erosion of mucoperiosteum,
- (4) Obstruction of ostiomeatal complex.

## RESULTS

As per history and clinical examination 58 (58%) patients had symptoms and signs suggestive of sinusitis. The most common symptom was nasal congestion found in 52 (52%) patients.

CT Scan PNS showed evidence of sinusitis in 78 (78%) patients whereas 22 (22%) patients had no evidence of sinusitis. Maxillary sinusitis was found in 78 (78%) patients, and 52 (52%) patients had frontal sinusitis. Ethmoid sinusitis was seen in 22 (22%) of patients and 8 (8%) of patients had sphenoid sinusitis. Maxillary polyp was found in 22 (22%) of patients and ostiomeatal complex block in 54 (54%) patients.

Among one hundred patients of bronchial asthma, clinically 58 (58%) patients had evidence of sinusitis whereas CT scan detected sinusitis in 78 (78%) patients.

## DISCUSSION

In our study, clinically 58 (58%) of patients out of 100 patients of bronchial asthma had signs and symptoms of sinusitis whereas 42 (42%) of patients were asymptomatic for sinusitis.

On CT scan of paranasal sinus, 78 (78%) patients of bronchial asthma showed evidence of sinusitis. All 58 patients, who were clinically symptomatic for sinusitis, had evidence of chronic sinusitis on CT scan PNS.

In addition, on CT scan PNS 20 (47%) more patients were detected to have sinusitis out of 42 clinically asymptomatic patients. 54 (54%) of patients showed evidence of ostiomeatal complex block. The ostiomeatal complex is the common drainage pathway for maxillary, frontal and anterior ethmoid sinuses. CT scan has given newer understanding of how the patient is affected with sinusitis.

Various mechanisms have been proposed to explain the relationship between sinusitis and asthma. The 5 most

common are sinonasobronchial reflex<sup>14-25</sup>; inhalation of cold, dry air<sup>26-31</sup>; aspiration of nasal secretions<sup>32-38</sup>; cellular and soluble mediators<sup>39-42</sup>, and diminished?-agonist responsiveness.

In one study Weille<sup>43</sup> examined 500 patients with asthma, 72% of whom had concomitant chronic sinus disease. Of 100 patients who underwent sinus surgery, 56 subsequently experienced improvements in chest symptoms; complete resolution of asthma occurred in 10. Twenty-three of 24 patients with simultaneous chronic sinusitis and asthma experienced a 75% or greater improvement in asthma symptoms after surgical drainage in another study.<sup>44</sup> This association is supported by other researchers, including Slavin,<sup>45</sup> who reported that lower airway symptoms were significantly reduced after nasal surgery in patients with severe asthma that often required daily oral corticosteroid therapy. In a follow-up of similar patients, 60% were found to have experienced improved asthma symptoms that persisted for 5 years.

In another study of sinus surgery in patients with asthma, 17 patients were treated with nasal surgery because of severe sinus disease. Fifteen of these patients experienced improved sinus symptoms, and 13 experienced significantly improved asthma symptoms, postoperatively.<sup>46</sup> Most of these patients underwent the Montgomery procedure, in which the mucosal lining of the sinuses is obliterated, and adipose tissue from the abdomen is implanted. This procedure promotes the formation of fibrous tissue, which helps to reduce the recurrence of infection. In one patient, severe asthma symptoms that could not be controlled with high-dose corticosteroids developed after the procedure. When the implant was removed, however, control of the asthma was regained. This phenomenon supports the idea that sinus disease and asthma exacerbations are related.

## CONCLUSION

The association of sinusitis and asthma seems to be more than an epiphenomenon.

In our study out of 100 asthmatics evidence for sinusitis was found clinically in 58% cases while CT Scan PNS detected sinusitis in 78% cases. This observation assumes significant clinical importance that all asthmatics need to be examined for evidence of sinusitis preferably by CT scan.

It is very pertinent to mention that ENT specialist must look down into the chest for evidence of bronchospasm and chest physicians should examine asthmatic patients for evidence of rhinosinusitis.

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# ECG Interpretation Skills of Family Physicians: A Comparison with Internists and Untrained Physicians

Dagdeviren N, kturk Z, Set T, Ozer C,

Department of Family Practice, Trakya University Medical Faculty, Edirne, Turkey

Mistik S,

Department of Family Practice, Erciyes University Medical Faculty, Kayseri, Turkey

Durmus B,

Department of Internal Medicine, Haydarpasa Teaching Hospital, Istanbul, Turkey

Unluoglu I,

Department of Family Practice, Osmangazi University Medical Faculty, Eskisehir, Turkey

## Correspondence:

Turan SET, MD, Trakya University Medical Faculty, Department of Family Practice, 22030 Edirne, Turkey

Phone: +90 533 211 6190, Fax: +90 284 2357652, E-mail: turanset@yahoo.com

## ABSTRACT

**Objective:** To compare the ECG reading skills of a sample of family physicians with those of untrained physicians and internists.

**Design:** A prospective analytic survey conducted between March and June 2002.

**Setting:** Turkish Association of Family Physicians, faculty from two different university hospitals, and untrained general practitioners in Edirne.

**Subjects:** Fifty-nine family physicians (37 senior clerks, 22 residents), 30 untrained general practitioners, and 51 internists (20 senior clerks, 31 residents) have joined the study.

**Main outcome measures:** ECG reading skills of the participants were evaluated with a set of ten different ECGs. Each ECG could be normal or with up to three abnormalities, with overall 16 abnormalities. Correct and false diagnosis scores, and non-response rates were calculated.

**Results:** Of the total participants, 94 (67.1%) could correctly identify two correct ECGs, and 119 (85.0%) could identify acute myocardial infarction. The correct and false diagnosis scores of senior family physicians, family physician residents, untrained general practitioners, senior internists, and resident internists were  $7.05 \pm 2.30$  vs.  $2.54 \pm 1.63$ ,  $6.59 \pm 2.46$  vs.  $2.73 \pm 1.98$ ,  $4.73 \pm 1.84$  vs.  $2.40 \pm 1.54$ ,  $9.85 \pm 2.06$  vs.  $1.20 \pm 1.15$ , and  $8.16 \pm 2.19$  vs.  $1.71 \pm 1.07$  respectively. There was a significant difference with regard to correct ( $F=18.983$ ,  $p=0.000$ ) and false ( $F=4.284$ ,  $p=0.003$ ) diagnosis scores between the groups. The normal ECG had the lowest non-response rate whereas the ECG with left bundle branch block had the highest non-response rate.

**Conclusion:** Although some groups achieved better in ECG interpretation, and family physicians are in an intermediate place of the spectrum, average scores of all groups are below acceptable levels. There is a need to improve the ECG interpretation skills of medical undergraduates.

## INTRODUCTION

Electrocardiography (ECG) is still regarded as the basic tool in the evaluation of cardiac diseases. It is performed in approximately 2 % of all office visits, and 30 % to 38 % of these ECGs will be abnormal [1]. ECG may be an important tool in primary care and it can considerably reduce the number of unnecessary referrals [2].

However, studies have revealed insufficiencies in the ECG interpretation skills of primary care physicians. In a study of Sur et al. 21% of the US family practice

residents could not identify ECG findings of acute myocardial infarction [3]. Margolis et al. obtained similar results from family practice residents in the United Arab Emirates [4]. Although difficulties in ECG interpretation seem to transcend geographical boundaries, it is not clear whether the capabilities of family physicians are lower than those of other specialties.

This study compared ECG interpretation skills of family physicians, untrained physicians, and internists from two different geographical locations in Turkey and investigated the effecting factors.

## SUBJECTS AND METHODS

### Setting

The study was conducted between March and June 2002. During that period, it was not necessary to have a special training (postgraduate training) in order to work in primary care; family physicians as well as untrained medical school graduates were working in primary care positions in Turkey; medical students had two months of internal medicine clerkship and 12 months of internship during the six years of undergraduate medical education; family medicine residents were receiving 9 months of internal medicine rotation (this training did not have any cardiology components); and internal medicine residency included 5 months of cardiology rotation. On the other hand, continuous medical education is not an obligation for either untrained physicians or specialists in Turkey.

### Sample

The samples in this study consisted of five different groups: family practice specialists (SFM), family practice residents (RFM), internal medicine specialists (SIM), internal medicine residents (RIM), and untrained physicians (UP). Untrained physicians are just graduates from medical schools in Turkey, who do not have any residency education or other vocational training, but still can work in primary care facilities.

Eighty family physicians were selected randomly from the registry of Turkish Association of Family Physicians (total 793 family physicians) and asked to join the study. 59 family physicians (73.8 %) have accepted to join. Of the family physicians, 37 were specialists and 22 residents. Their mean time (mean  $\pm$  SD) of being in that current position was  $2.68 \pm 2.07$  years (min. 1, max. 10) and  $2.05 \pm 1.17$  years (min. 1, max. 5) respectively.

Nine primary healthcare offices with 38 physicians (all without postgraduate education) are providing primary care to 140.000 inhabitants in Edirne. All untrained physicians working in Edirne, were asked to join the study. Thirty (78.9 %) out of 38 accepted to join the study. The mean time (mean  $\pm$  SD) of the untrained physicians for being in the current position was  $6.10 \pm 3.50$  years (min 1, max. 12).

All internal medicine residents and specialists from a teaching hospital and a medical faculty were invited to join the study. Out of 68 physicians invited, 51 (70.0 %) have accepted to join. Twenty of the internists were specialists and 31 were residents. Mean time (mean  $\pm$  SD) of the participants for being in their current positions was  $3.29 \pm 3.64$  years (min. 1, max. 15) and  $2.71 \pm 1.04$  (min 1, max. 4) years respectively.

Demographic features of the different groups are presented

in Table 1 (*see next page*).

### Measurement instrument

A measurement instrument was developed similar to that of Margolis et al. [4] consisting of 10 standard ECGs with 12 leads. Each ECG contained one to three clinical diagnoses with a total of 16 diagnoses in the ECG set. Two of the ECGs were normal. The measurement instrument was applied in a comfortable atmosphere without giving any clinical information. Three researchers were trained and used for this purpose. The participants had 20 minutes to complete the instrument. They were not allowed to use any additional tool during this process. Before measuring the ECG interpretation skills, a questionnaire was given to each participant to obtain demographic data such as age, sex, date of receiving medical license, and current position. No other discriminating question was asked to prevent violation of anonymity.

### Statistical analysis

One of the researchers was the final rater. He checked the responses of the participants to the ECG sets and scored correct diagnoses (CD) and false diagnoses (FD) for each ECG. By counting the CD and FD of each ECG, correct scores (CS) and false scores (FS) were calculated for each individual. The results were evaluated by a computer using the SPSS package program (SPSS for Windows release 10.0.5, standard version, SPSS, Inc, Chicago, 1989-1999). Comparisons were done with chi-square, Pearson's bivariate correlation, Kruskal-Wallis, one-way ANOVA, and Tukey's post hoc analysis.

## RESULTS

There was statistically significant difference between groups with regard to correctly diagnosing right and left bundle branch block, past myocardial infarction, sinus bradycardia, acute myocardial infarction, left ventricle hypertrophy, atrial flutter, first-degree atrioventricular block, and pace maker. Family practice residents and untrained physicians were significantly less successful in correctly identifying acute myocardial infarction when compared with other groups ( $p=0.003$ ; Table 2 (*see next page*)).

There was no significant correlation between the work experience (the mean duration of the current position) and mean CS and FS ( $p>0.05$ ).

Specialists of internal medicine and untrained physicians have received the highest and lowest mean correct scores respectively ( $9.85 \pm 2.06$  vs.  $4.73 \pm 1.84$ ). Mean CS values for family medicine specialists, family practice residents, and internal medicine residents were  $7.05 \pm 2.30$ ,  $6.59 \pm 2.46$ , and  $8.16 \pm 2.19$  respectively. In accordance with this,

total response rates (CS + FS) of SIM, RIM, SFM, RFM, UP were 11.05, 9.87, 9.59, 9.32, and 7.13 respectively (Figure 1). There was a statistically significant difference between these values ( $F=18.983$ ,  $p=0.000$ ). Tukey's post hoc analysis was performed in order to search for the groups creating the difference (Table 3). This analysis revealed that untrained physicians were less successful compared with family practice specialists and internal medicine specialists, whereas family practice residents were less successful compared with internal medicine specialists and internal medicine residents.

Family practice residents received the highest false scores whereas internal medicine specialists received the lowest false scores (mean  $\pm$  SD:  $2.73 \pm 1.98$  vs.  $1.20 \pm 1.15$ ). The mean false scores for family practice specialists, internal

medicine residents, and untrained physicians were  $2.54 \pm 1.63$ ,  $1.71 \pm 1.07$ , and  $2.40 \pm 1.54$  respectively (Figure 1). There was a statistically significant difference between these values ( $F = 4.284$ ,  $p = 0.003$ ). Tukey's post hoc analysis was performed in order to determine the groups responsible from the difference (Table 4).

The highest error rate was in the ECG set with pacemaker and atrial fibrillation diagnoses. 32.8 % ( $n = 46$ ) of the participants received false scores from this ECG set. The lowest error rate was in the ECG set with acute myocardial infarction and sinus bradycardia. Only 7.9 % of the participants ( $n = 11$ ) got false scores from this ECG set.

Normal ECG and acute MI were selected as the most important key diagnoses important for all specialties There

**Table 1:** Age and sex distribution of the different groups

	Age (years)			Sex		Total, n (%)
	Mean $\pm$ SD	Min.	Max.	Male, n (%)	Female, n (%)	
SFP	35.76 $\pm$ 2.71	30	41	28 (75.7)	9 (24.3)	37 (100.0)
RFP	31.00 $\pm$ 2.65	27	37	16 (72.7)	6 (27.3)	22 (100.0)
UP	31.23 $\pm$ 3.68	24	41	22 (73.3)	8 (26.7)	30 (100.0)
SI	32.65 $\pm$ 5.01	26	48	15 (75.0)	5 (25.0)	20 (100.0)
RI	28.16 $\pm$ 1.68	26	32	22 (71.0)	9 (29.0)	31 (100.0)
Total	31.91 $\pm$ 4.15	24	48	103 (73.6)	37 (26.4)	140 (100.0)

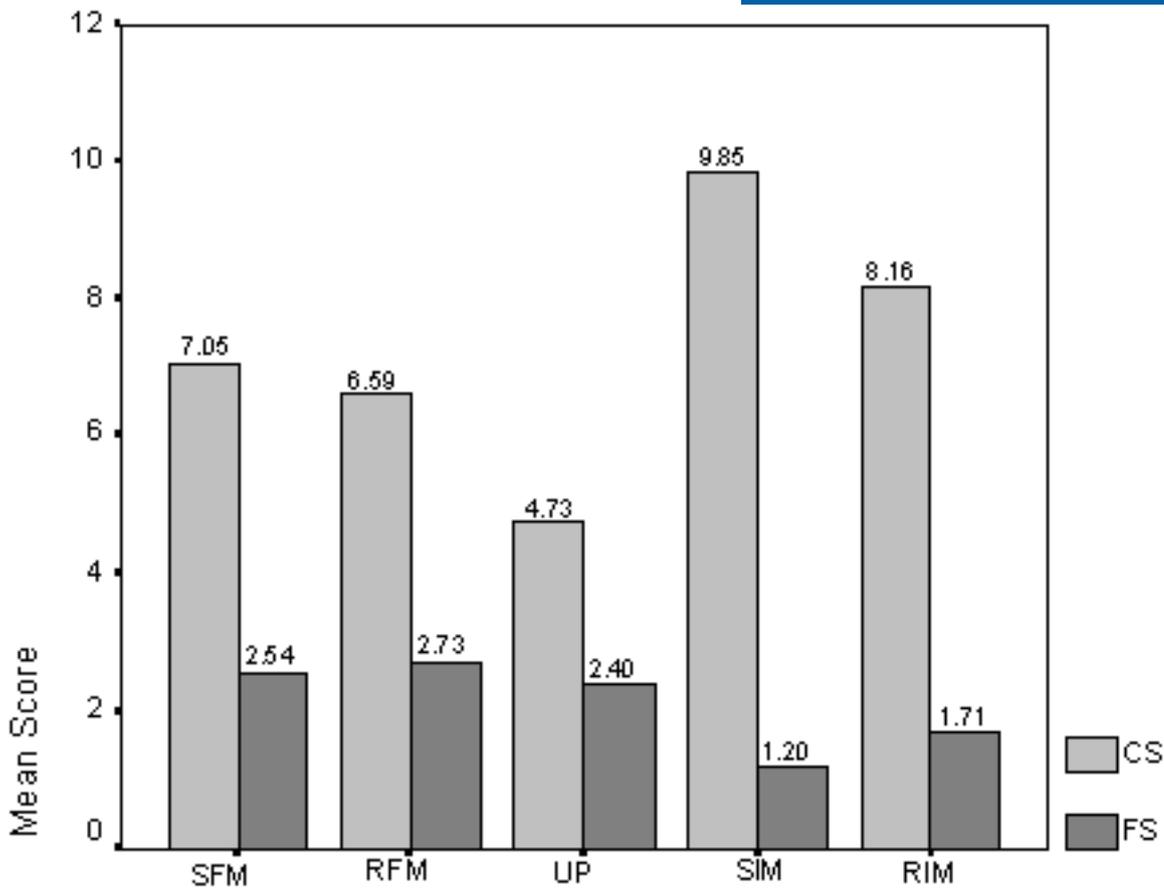
**Table 2:** The number of correct diagnoses in different groups. (The numbers within the brackets represent the percentages of correct diagnoses for the given group.)

Diagnosis	Family Practice		Internal Medicine		Untrained GP	X <sup>2</sup>	p
	Specialist	Resident	Specialist	Resident			
T1	2 (5.4)	2 (9.1)	2 (10.0)	8 (25.8)	6 (20.0)	7.328	0.120
T2	23 (62.2)	9 (40.9)	19 (95.0)	26 (83.9)	12 (40.0)	26.155	0.000
T3	7 (18.9)	8 (36.4)	10 (50.0)	20 (64.5)	8 (26.7)	17.877	0.000
T4	22 (59.5)	12 (54.5)	3 (15.0)	14 (45.2)	17 (56.7)	12.025	0.017
T5	12 (32.4)	7 (31.8)	18 (90.0)	14 (45.2)	0 (0)	43.454	0.000
T6	2 (5.4)	2 (9.1)	1 (5.0)	3 (9.7)	3 (10.0)	0.911	0.923
T7	34 (91.9)	16 (72.7)	20 (100)	29 (93.5)	20 (66.7)	17.192	0.002
T8	30 (81.1)	17 (77.3)	16 (80.0)	23 (74.2)	26 (86.7)	1.616	0.806
T9	24 (64.9)	12 (54.5)	16 (80.0)	21 (67.7)	4 (13.3)	29.854	0.000
T10	25 (67.6)	14 (63.6)	19 (95.5)	27 (87.1)	9 (30.0)	31.516	0.000
T11	31 (83.8)	18 (81.8)	15 (75.5)	25 (80.6)	23 (76.7)	0.905	0.924
T12	21 (56.8)	12 (54.5)	19 (95.5)	19 (61.3)	3 (10.0)	37.503	0.000
T13	2 (5.4)	2 (9.1)	13 (65.0)	6 (19.4)	0 (0)	44.595	0.000
T14	1 (2.7)	2 (9.1)	1 (5.0)	1 (3.2)	5 (16.7)	6.184	0.186
T15	17 (45.9)	5 (22.7)	17 (85.0)	10 (32.3)	2 (6.7)	35.313	0.000
T16	8 (21.6)	6 (27.3)	8 (40.0)	7 (22.6)	4 (13.3)	5.004	0.287

T1 = sinus tachycardia;  
T2 = right bundle branch block;  
T3 = past MI;  
T4 = sinus bradycardia;  
T5 = left bundle branch block  
T6 = sinus bradycardia;

T7 = acute inferior MI;  
T8 = normal I;  
T9 = left ventricle hypertrophy;  
T10 = atrial flutter 1;  
T11 = normal;

T12 = first degree atrioventricular block;  
T13 = left bundle branch block;  
T14 = atrial flutter 2;  
T15 = pacemaker;  
T16 = atrial fibrillation



**Table 3:** Tukey’s post hoc analysis of correct scores.

(I) Group	(J) Group	Mean difference (I-J)	SD	P
SFM	RFM	0.46	0.59	0.934
	SIM	-2.80	0.60	0.000
	RIM	-1.11	0.53	0.225
	UP	2.32	0.53	0.000
RFM	SIM	-3.26	0.67	0.000
	RIM	-1.57	0.61	0.073
	UP	1.86	0.61	0.020
SIM	RIM	1.69	0.62	0.053
	UP	5.12	0.63	0.000
RIM	UP	3.43	0.56	0.000

**Table 4:** Tukey’s post hoc analysis of false scores.

(I) Group	(J) Group	Mean difference (I-J)	SD	P
SFM	RFM	-0.19	0.41	0.991
	SIM	1.34	0.42	<b>0.012</b>
	RIM	0.83	0.37	0.156
	UP	0.14	0.37	0.996
RFM	SIM	1.53	0.47	<b>0.009</b>
	RIM	1.02	0.42	0.109
	UP	0.33	0.42	0.938
SIM	RIM	-0.51	0.43	0.763
	UP	-1.20	0.43	<b>0.046</b>
RIM	UP	-0.69	0.39	0.380

SFM = Family Medicine Specialists,  
RFM = Family Medicine Residents,  
UP = Untrained Physicians,  
SIM = Internal Medicine Specialists,  
RIM = Internal Medicine Residents.

**Table 5:** Correct identification of the normal ECG's plus acute MI by the different groups.

	Groups					Total
	SFP, n (%)	RFP, n (%)	UP, n (%)	SI, n (%)	RI, n (%)	
<b>Could not diagnose</b>	14 (37.8)	11 (50.0)	16 (53.3)	6 (30.0)	13 (41.9)	60 (42.9)
<b>Could diagnose</b>	23 (62.2)	11 (50.0)	14 (46.7)	14 (70.0)	18 (58.1)	80 (57.1)

$X^2=3.54$ ,

$P=0.47$

SFM = Family Medicine Specialists,  
RFM = Family Medicine Residents,  
UP = Untrained Physicians,  
SIM = Internal Medicine Specialists,  
RIM = Internal Medicine Residents.

**Table 6:** Non-response rates of the different groups.

	SFP, n (%)	RFP, n (%)	UP, n (%)	SI, n (%)	RI, n (%)	$X^2, P$
ECG 1	2 (5.4)	4 (18.2)	8 (26.7)	0 (0)	0 (0)	17.4, 0.00
ECG 2	4 (10.8)	2 (9.1)	8 (26.7)	0 (0)	5 (16.1)	8.3, 0.08
ECG 3	2 (5.4)	5 (22.7)	7 (23.3)	0 (0)	2 (6.5)	11.6, 0.02
ECG 4	2 (5.4)	2 (9.1)	4 (13.3)	0 (0)	4 (12.9)	3.9, 0.41
ECG 5	7 (18.9)	8 (36.4)	16 (53.3)	3 (15.0)	9 (29.0)	12.3, 0.02
ECG 6	1 (2.7)	1 (4.5)	7 (23.3)	0 (0)	4 (12.9)	12.0, 0.02
ECG 7	4 (10.8)	0 (0)	6 (20.0)	1 (5.0)	3 (9.7)	6.3, 0.17
ECG 8	7 (18.9)	7 (31.8)	17 (56.7)	0 (0)	5 (16.1)	24.8, 0.00
ECG 9	25 (67.6)	10 (45.5)	18 (60.0)	7 (35.0)	19 (61.3)	7.1, 0.13
ECG 10	5 (13.5)	4 (18.2)	18 (60.0)	2 (10.0)	9 (29.0)	23.8, 0.00
Total	59 (15.9)	74	109	13	60	

Diagnoses within each ECG: ECG 1: sinus tachycardia, right bundle branch block, and past MI; ECG 2: sinus bradycardia and left bundle branch block; ECG 3: sinus bradycardia and acute inferior MI; ECG 4: normal; ECG 5: left ventricle hypertrophy; ECG 6: atrial flutter; ECG 7: normal;

was no statistically significant difference between groups with regard to correctly identifying two normal ECG sets plus acute MI ( $X^2=3.54$ ;  $p=0.471$ ) (Table 5). Of the total sample, 54.2 % ( $n = 76$ ) could correctly identify these three diagnoses. On the other hand, correct identification rates of the normal ECG's and acute MI were 67.1 % ( $n = 94$ ) and 85 % ( $n = 119$ ) respectively. Median non-response rates of the groups were calculated. UP's had the highest non-response rates followed by RI, SFP, RFP, and SI (Median non-response rates 3.5, 2, 1, 1, and 0 respectively) (Kruskal-Wallis  $X^2=25.7$ ,  $p<0.001$ ). The highest non-response rate was observed in the ECG 9 ( $n=79$ , 56.4%), which contained the diagnoses left bundle branch block and atrial flutter whereas the lowest non-response rate was in ECG 4 ( $n=12$ , 8.6 %) (Table 6).

## DISCUSSION

ECG interpretation skills are important for all clinicians and many studies from different countries have revealed that the problem is universal [3-6]. This study examines the problem by focusing on primary care physicians and comparing them with internists.

These results should be interpreted in the view of the undergraduate and residency education curriculum of Turkey. Currently, there is a common curriculum for family practice residency education throughout Turkey, which does not contain any place for cardiology rotations [7]. In our opinion, lack of cardiology education during family practice residency is the main reason why family physicians scored less than internists in this study. Family physicians

gain their skills probably during their internal medicine rotations and from patient encounters in their practices. However, although not at the desired level, it is clear that specialisation makes a difference. Family physicians are in an intermediate place between internists and untrained physicians.'

The differences between family physicians and untrained physicians raise concerns about a potential lack of sufficient ECG training in undergraduate medical education curriculum. This finding, while limited to Edirne, has implications for the rest of the nation. We assume that ECG reading capabilities certainly play some role in the referral rates to secondary and tertiary levels. The referral rate in the primary health care is currently around 14.4 % for Turkey [8]. Insufficiencies in ECG reading probably can be regarded as a factor that makes primary care physicians fear cardiac symptoms, but this topic needs investigation by other studies.

There was statistically significant difference between the groups with regard to most of the diagnoses. It is interesting to note that all diagnoses that reveal no difference between the groups are normal ECGs or those related to cardiac rhythm disturbances. These are relatively easy to diagnose just by measurement of cardiac rate. On the other hand, specialists of internal medicine were more successful than other groups in identifying diagnoses that are more difficult.

Correct recognition of an acute MI strip is one of the important skills primary care physicians should have [2]. While only 66.7 % of the untrained physicians could identify acute MI, this percentage increases to 91.9 % for specialists

of family medicine. This finding supports our assumption on the insufficiency of undergraduate medical education to cover the clinical requirements of the graduates. The total of CS plus FS did not approach the total number of diagnoses (i.e. 16) in any group. This reveals that all groups, but especially the untrained physicians, have doubts in making a certain decision on the ECG sets. Although we expect somehow reverse findings in the results of false scores, untrained physicians represent an exception in this picture. Pacemaker is a rare diagnosis encountered in primary care [1]. We assume that the current undergraduate as well as postgraduate curricula of all groups in this study should be questioned with regard to teaching ECG reading skills. We conclude that especially physicians working at primary care positions have less chance to have patients with pacemakers, and are thus less successful in correctly identifying this diagnosis.

### *Aspects Concerning Education*

These findings show that, graduates of medical faculties do not have the necessary qualifications for ECG interpretation. However, there is an agreement that the aim of medical education is to train graduates for some kind of specialisation, including family practice [9]. Hence, it is understandable that medical graduates are not ready to practice in primary care settings. The fact that medical graduates can work in primary care is the side of this problem, which might be a disadvantage for patients. Information seeking among primary care physicians is a problem for coping with the growing knowledge of medicine [10]. Lack of obligations for continuous medical education may be an explanation for lower scores of untrained physicians. Another reason may be the relatively low availability of diagnostic tools including ECG in the Turkish primary health centres.

Although internists have performed better than family physicians, both groups seem to have problems with ECG interpretation. One striking result of this study is that even the specialists of internal medicine could get a score of only 9.85 out of 16 (61.6 %). We suggest cardiology rotations of certain durations for all residency trainings where ECG reading skills are important. A curriculum focused especially on diagnoses prevalent for primary care should be applied to family practice residents, taking place in cardiology departments and primary care offices together.

Structured training programs of ECG interpretation skills are in fact necessary for all clinical specialties dealing with the patient. Work experience should contribute to knowledge enhancement. However, given the fact that there is no correlation between work experience and total correct and false scores, we assume that work circumstances have no effect in improving the diagnostic skills,

### *Limitations*

Although we tried to include the maximum sample size from each group, it was not possible to reach a nationally representative sample. Hence, this is just a study comparing different medical specialties. The samples of different groups

were selected with similar characteristics with regard to sex, but the same is not true for age; specialists are older due to the time elapsed in residency education. On the other hand, there are some non-respondents, who might be assumed as different than the study population, but it is not possible to clarify this issue in this study setting.

There is currently no standardised instrument to measure ECG reading skills. We developed our own instrument in the light of the literature and with the counselling of a cardiologist. Although particularly important for branches such as internal medicine, paediatrics, and family medicine, ECG reading is a skill necessary for all clinicians. To reveal a whole picture exposing the different factors on the degree of ECG reading skills, studies covering all physician groups with higher sampling rates should be conducted. A standardised ECG set can be developed for this purpose in order to help researchers from different nations to plan studies enabling international comparison.

## CONCLUSION

This study has demonstrated that family practice residency education contributes to ECG interpretation skills. Beyond that the skills are not satisfactory enough, we do not think that formal education has much contribution to this effect. Personal efforts and the efforts of individual educators probably have much more effect in this matter. We think that the addition of formal cardiology training in family practice residency education will help to close the gap between internists and family practitioners. This study also supports the fact that primary care physicians must have special training in accordance with international standards in order to work in the field. There is a need to improve the ECG interpretation skills of medical undergraduates supported by appropriate postgraduate education.

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# Efficacy of Chlorhexidine Mouthwash as an Oral Antiseptic - An In vivo Study on 20 Patients.

Murali Srinivasan, MDS, MBA,  
Bell Raj Eapen, MD, DNB, MSc, Dip. (Derm.)  
Geethanjali Bhas, MD, DNB.  
Cyril Kumar T, Bsc, DMLT,

## Correspondence:

Dr. Murali Srinivasan, MDS, MBA, Atlas Star Medical Center, P.O. Box 112392, Dubai, UAE.  
Tel: 009714 - 3967401 Mob: 0097150- 3408549 Email: murali@prodents.com. Website: www.prodents.com

**Key Words:** Chlorhexidine Gluconate, Dental Plaque, Adjunct Therapy, Oropharyngeal Infections.

## ABSTRACT

**Background & Objective:** Chlorhexidine Gluconate has been considered a gold standard in its use as a potent oral antiseptic mouth rinse. However its use is primarily limited to the dental professionals. The study aims in checking the efficacy of 0.2% chlorhexidine gluconate mouthrinse on the culturable organisms of oral cavity and the oropharynx.

**Methods & Materials:** Three sets of swabs were collected from 20 volunteers. The first set (A) was collected after a thorough oral prophylaxis was carried out. The subjects were then asked to refrain from any form of oral hygiene measure for 24 hours and a second set of swabs (B) were collected. Following which the subjects were made to rinse their mouths with undiluted 0.2% chlorhexidine gluconate solution for 60 seconds and a third set of swab (C) was collected. The swabs were then cultured for bacterial colonies and the colonies were then counted after 48 hours of incubation and scored. The mean scores for each set of samples were then calculated and a Kruskal-Wallis test was used for the statistical analysis in this study.

**Results & Conclusion:** The mean counts were considerably higher for B & C than A after a period of total abstinence of oral hygiene for 24 hours. The counts for C were considerable lower than B and was statistically significant ( $p$  value =0.0004). In conclusion the reduction in the bacterial colonies clearly illustrates the efficacy of chlorhexidine against oral microbes hence the use of this agent may be recommended routinely as a preprocedural protocol prior to performing any dental or oropharyngeal procedures and also may be effectively prescribed as an adjunct to other conventional therapies for oral, oropharyngeal, & upper respiratory tract infections.

## INTRODUCTION

For decades now, Chlorhexidine (CHX) is considered a 'gold standard' as an efficient antibacterial and therapeutic oral rinse,<sup>1</sup> the use of this is however not global as a preprocedural therapeutic rinse. The most preferred form of CHX is 0.2%v/w chlorhexidine gluconate solution, commonly used as an antiseptic mouth rinse and recommended by the majority of dental professionals worldwide. CHX is primarily used in the treatment of gingivitis, inhibition of dental plaque, as an adjunct to supportive periodontal care, antiseptic oral rinse following dental extractions and surgeries, prevention of alveolar osteitis, treatment of halitosis, and prevention of oral candidiasis.<sup>2-6</sup> Few have even advocated the use of CHX for the disinfection of root canals in endodontics.<sup>7</sup> While others have strongly recommended its use in irradiated patients and those undergoing chemotherapy for the treatment of head and neck carcinomas.<sup>8</sup> CHX 0.2% is the leading antiseptic for controlling gingivitis, and plaque inhibition.<sup>9</sup> Although it is a potent antiseptic

when used and is known to considerably bring down the microbial count; it is however, more frequently employed routinely as a postoperative preventive adjunct measure rather than a routine preoperative procedure.<sup>10</sup> Its use, after speculation, is invariably limited to field of dentistry. This study was targeted to check the efficacy of 0.2% CHX on the culturable microorganisms in the oral & oropharyngeal region, and was aimed at justifying its use as a standard protocol prior to any procedures being carried out in the said regions and to further recommend it as an adjunct therapy in treatment of all oropharyngeal infections by all specialties of medicine, not just in dentistry.

## MATERIALS AND METHODS

A group of 20 non smoking volunteers were picked with no age and sex predilection. The group consisted of 10 men and 10 women with the mean age of the group being 31.2 years. The volunteers were thoroughly examined

and found to be free from any active oropharyngeal and dental infections. Thorough complete oral hygiene procedures were carried out on each of the subjects prior to the study to ensure complete plaque elimination. Three sets of swabs were collected from each volunteer.

The first set was collected immediately after the prophylactic procedure was completed and labelled A. The subjects were then instructed not to perform any oral hygiene procedures for 24 hours (the subjects were to refrain from procedures such brushing, flossing, rinsing etc.). A second set was then collected after 24 hours and labelled sample B. After the collection of B, the subjects were then made to rinse with 10 ml. of undiluted 0.2% chlorhexidine gluconate solution thoroughly for 60 seconds (as recommended by manufacturer's instructions). The third set of swabs were then collected from the subjects and labelled C.

The swabs were collected from predetermined sites in the oral cavity – upper and lower molar regions, dorsum of the tongue and the tonsillar region from each of the subjects.

The swabs were then cultured for bacterial colonies under standard incubatory conditions on blood and chocolate agar, which are the most common culture media used for the culture of oropharyngeal bacteria.<sup>11</sup> Standardised

streaking techniques were followed using a sterile loop of known volume (1/500ml).

**Estimation Of bacterial numbers:<sup>12</sup>**

The colonies were then counted after 48 hours. The total numbers of bacterial colonies were counted and multiplied using a factor based on the volume of the streaking loop. This procedure was standardized using quality control measures and followed on all the culture plates.<sup>13</sup>The scoring pattern used in this study is as follows:

- Score 0 – No growth.
- Score I –  $<10^3$  colony forming units (CFU)
- Score II –  $10^3$ - $10^4$  CFU
- Score III –  $10^4$ - $10^5$  CFU
- Score IV –  $>10^5$  CFU

Experimental data reveals that a colony count less than  $10^6$  is required to meet the pharmacological definition of 'sterile.'<sup>14</sup>

**RESULTS**

The results obtained were then scored and tabulated in Table-1. The mean scores were then calculated for A, B & C and a **Kruskal-Wallis test** was used for the statistical analysis of the results.

**Table 1:** Results showing the scores of the colony numbers for each of the samples collected from each subject.

Volunteers	A (Score)	B (Score)	C (Score)
1	I	IV	II
2	IV	IV	IV
3	III	IV	IV
4	I	IV	II
5	0	IV	II
6	0	II	I
7	II	IV	III
8	0	IV	III
9	I	I	I
10	I	IV	II
11	I	IV	II
12	IV	IV	IV
13	III	IV	IV
14	I	IV	II
15	0	IV	II
16	0	II	I
17	II	IV	III
18	0	IV	III
19	I	I	I
20	I	IV	II
<b>Mean</b>	<b>1.5500</b>	<b>3.7500</b>	<b>2.6000</b>

**A** - Immediately After Complete Oral Prophylaxis.  
**B** - After 24 Hours of No Oral Hygiene.  
**C** - After rinsing with 10 ml. undiluted 0.2% CHX for 60 Seconds.

**Scores:-**

- Score 0** – No growth,
- Score I** –  $<10^3$  CFU (colony forming units),
- Score II** –  $10^3$ - $10^4$  CFU
- Score III** –  $10^4$ - $10^5$  CFU.
- Score IV** –  $> 10^5$  CFU.

The results of this study indicate that the mean scores for group A (mean=1.5500) was considerably lower than B (mean=3.7500) & C (mean=2.6000). The mean values for group C further showed a reduction in the colony numbers than B. On statistical analysis a significant difference was found between groups C & B ( $p$  value = 0.0004).

## DISCUSSION AND CONCLUSION

The oral cavity is a reservoir for commensal and pathogenic micro-organisms. A complete state of asepsis is hardly prevalent in the oral cavity. This however does not imply that there is an active infection at all times, but certainly depicts the constant presence of micro-organisms which may result in their frequent transmission to the different communicating regions of the oral cavity such as the oropharynx, lungs, nasal cavity, eustachian canal, sinuses etc. This may not pose a significant threat in a state of normalcy, but, in the presence of an existing infection the normal oral micro flora itself may potentially super add to an existing infection. Conversely, an existing focal sepsis in the oral cavity may act as a continual supply of pathogens and pus resulting in a chronic insidious recurrent oropharyngeal infection of some sort which is usually not responsive to antibiotic therapy. Such cases usually resolve with the elimination of the source of infection but also can be significantly controlled to a great extent at the onset itself with a direct local reduction in the pathogenic numbers through the use of local antiseptics such as chlorhexidine.<sup>15</sup>

The primary application of CHX is predominantly restricted to field of dentistry, that too, as a post procedural therapeutic rinse.<sup>9</sup> The focus must however shift, as the study clearly evidences its potential antiseptic actions. It will indeed be certainly beneficial if the prescription of CHX mouth-rinse is added as an adjunct to conventional therapy.<sup>16</sup>

The outcome of this simple clinical trial clearly illustrates the substantial reduction in the bacterial numbers of the cultures obtained from samples with and without of the use of CHX mouth rinse. It only progresses to highlight further the compelling need to maintain oral asepsis. Therefore, from the obtained results the authors conclude – that a significant decrease in the bacterial count is present with the use of CHX. Therefore the clinical relevance of the study can substantiate the following measures:

- That it is imperative to use CHX mouth rinse as a recommended ‘pre-procedural’ standard protocol for all dental related procedures and prior to any procedures performed in the oral and oropharyngeal region.

- And further propose that it may be routinely prescribed by other practitioners in various other specialties of medicine routinely as a mouth rinse to augment their conventional therapeutic methods for treating oropharyngeal and other related infections, so as to definitely ensure an infection free and possibly a sterile oral and oropharyngeal environment.

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# Facial pain, a common clinical condition, usually missed by clinicians as a psychosomatic disorder

Medyan Al-Rousan, BDS, MSc, FDSRCS (Eng), FFDRCS (Ire).  
Maxillofacial Unit, King Hussein medical Center, The Royal Medical Services, Jordan.

**Correspondence** Medyan Al-Rousan, P.O.Box 3030, Amman 11821, Jordan  
Tel: ++96279 5314644 Email: mhalrousan@hotmail.com

**Key words:** facial pain, myofacial pain dysfunction syndrome, temporomandibular joint dysfunction syndrome, psychosomatic disorders.

## ABSTRACT

This study had been conducted based on the fact that facial pain is a psychosomatic disorder and patients are believed to be psychologically vulnerable and should benefit from psychological support rather than from treatment based on the occlusal adjustment.

Twenty patients presenting with complaints of myofacial pain dysfunction syndrome had been enrolled in this study. Patients were informed in full about the condition and its relation to stress, patients were then reviewed for the following next six months on a monthly basis.

By the end of the sixth month, five patients (25%) described complete relief from their aches; 12 patients (60%) described a significant relief regarding their aches, only 3 patients (15%) reported no improvement and so were convinced to be referred to a specialist psychiatrist., Two of these achieved a significant improvement upon using tricyclic antidepressant therapy, but the third one is still experiencing pain in the myofacial structures, and not describing any improvement from using the medical therapy prescribed for them.

Myofacial pain dysfunction syndrome is a psychosomatic disorder that lacks any criteria to be considered as an organic disease and so our management should be based on this fact.

## INTRODUCTION

Chronic idiopathic facial pain is a common problem that confers a real challenge for many medical and dental specialists. There are many symptom complexes of facial pain i.e. myofacial pain dysfunction syndrome, atypical facial pain, atypical odontalgia and oral dysaesthesia (1). Although described as separate conditions, these symptom complexes are interrelated, and frequently occur at different stages or may coexist in the same patient. Also, the idiopathic facial pain is frequently associated with other chronic pain conditions such as back pain, headache, irritable bowel and pelvic pain; a condition that is described as whole body pain syndrome (2).

Myofacial pain dysfunction syndrome, also known as facial arthromyalgia or temporomandibular joint dysfunction syndrome, presents as a unilateral or bilateral pain in the temporomandibular joint and its associated craniofacial musculature. Other features include clicking and sticking of the joint, limitation of the mouth opening and deviation to the affected side. There might be also a sense of fullness, and popping noises in the ears. Tenderness in the myofacial apparatus is quiet a common finding in the myofacial pain dysfunction syndrome

patient, tenderness is most commonly present in the temporalis and masseter muscles. Tenderness can be also found beneath the condylar head adjacent to the lobe of the ear, which is described sometimes as earache. Also tenderness may present over the mastoid process (3).

No organic disease of the temporomandibular joints could be demonstrated. Also there is no evidence that the disease is progressive and goes on to produce permanent damage in the joint itself (4).

Myofacial pain dysfunction syndrome patients include individuals with obsessional perfectionist traits and tendency for self-denial and repression to their personal problems, the thing that accounts for their somatic manifestations (5) (6).

Myofacial pain patients can be considered to a large extent, as psychologically vulnerable patients. In a study done by Feinmann and Harris on such a group of patients, they found 35% of the patients suffered from depressive illness, 22% mixed neurosis and 43% as psychiatrically normal (7).

A biochemical basis for chronic facial pain was suggested

because of its association with depression and the response to tricyclic antidepressants. Chronic pain patients have shown hypercortisolaemia and abnormal dexamethasone suppression test responses (8). Also impaired excretion of tyramine sulphate has been recognised as a trait marker for chronic facial pain (9).

The psychological basis for myofacial pain had been considered because of its considerable response to tricyclic antidepressants in terms of the substantial relief of pain. The precise mode of action is not well known, but it could be due to the central analgesia produced because of increasing concentration of analgesic monoamines in the midbrain (10).

Patients with myofacial pain dysfunction syndrome tested by means of standard psychological scoring methods were found to have significantly higher scores for neuroticism, anxiety and related factors affecting muscle tension, and significantly lower pain threshold than controls (11). Psychogenic pain may arise as a result of stress, or as a feature of an emotional disturbance such as anxiety or depression. Also it might be a manifestation of psychosis, and there have been several reports of higher levels of stressful life events in idiopathic facial pain patients (12).

The concept of pain vulnerability was underlined by the clinical observation of different pains occurring at different stages of life. In childhood such patients suffer from abdominal pain or earache. In adolescence temporomandibular joint pain or dysmenorrhoea, and later abdominal pain (irritable bowel syndrome), neck and back pain and pruritis (13) (14). This vulnerability may be genetically transmitted, as siblings of patients suffering myofacial pain have higher incidence of chronic pain conditions (15).

The most important aid to the diagnosis of myofacial pain dysfunction syndrome is the history i.e. medical, family and social history, which must be followed by a careful clinical examination and appropriate investigations including radiographs and where appropriate a computerised or magnetic resonance image. The history taking should be in a way that establishes the nature of pain so as to exclude any other condition that may manifest as pain in the head and neck region. Also we have to check for any other associated symptoms such as limitation of mouth opening, clicking in the joint, blurring of vision or any associated phenomena.

This study had been conducted in based on the fact that facial pain is a psychosomatic disorder and patients are believed to be psychologically vulnerable and should benefit from assurance and psychological support rather than from treatment based on occlusal adjustment.

## PATIENTS AND METHODS

The first twenty patients presented to the outpatient oral surgery clinics referred by either general medical or dental practitioners with complaints suggestive of myofacial pain dysfunction syndrome, have been enrolled in this study. The study was conducted in a double blind fashion, as patients were enrolled into the trial regardless of their age, gender, medical condition, or their socio-economic status and no kind of any selective criteria have been suggested.

All of them presented with pain in the pre-auricular area that radiates to the temporal area and sometimes to the whole side of the face. Some of the patients, 22%, had symptoms of limited mouth opening, while the rest were able to exhibit normal mouth opening. Crepitation, or noises in the joint, were found only in 8% of the patients.

A full medical and social history had been obtained from all patients, with especial emphasis on the family and social history. Also a detailed understanding of the patient's life style and nature of his occupation was an essential part in taking the patients' history. Patients were asked if they think or feel that they are under stress or feel unhappy about their jobs or life style.

My approach to all patients was that of giving them enough time (15-20 min) to explain to them the real nature of the disease, giving great emphasis on the fact that the whole condition lacks any organic change in the joint apart from a very little unlucky minority who might end up with some deformity in the joint. Also the importance of stress and psychological factors had been well emphasised, but it had been made very clear in simple language that it is not necessary to be labelled as a psychologically disturbed patient to encounter such a condition. Also, patients were presented with some numerical facts such as the percentage of people having psychiatric disease or suffering from stress related to their type of career or their life style. Also, the detail of psychosomatic disorders had been described to all patients in very simple words.

Patients were told that such a condition is a long term one that is expected to persist for few months up to few years, but not forever, They were also told about some remissions after which they may start encountering the same symptoms again. Patients were motivated to seek psychiatric counselling, but it was not an essential part of the protocol of this study to do so. It had been made very clear to them that we do expect better results following psychiatric counselling.

No regular medications have been prescribed to the patients, but all have been advised to take non-steroidal

anti-inflammatory drugs i.e. Ibuprofen, in case they encounter unbearable pain or discomfort, provided that there is no contraindications to such drugs and not to exceed the daily recommended dosage.

All patients were reviewed on a monthly basis for the next six months following their first attendance to my outpatient clinic, and then all patients were advised to be reviewed on a three months basis.

## RESULTS

The patients were between 21-39 years old, and male to female ratio were 1:3. None of the patients had any serious medical illness or were taking any medication on a regular basis. Most of the patients (90%) were found to be well educated, and around 75% of them are employed in jobs of an indoor nature that demand a lot of mental concentration.

As patient counselling was my primary approach, my conversation with the patients revealed that most of the patients (seventy per cent) are under stress that they relate to their jobs or their life style. Two patients admitted poor communication with their surroundings and difficulties in establishing a new relations and both had some psychological treatment at some stage of their life.

On reviewing patients, gradual improvement had been achieved in regard to the pain symptoms, and patients gradually appeared to be adapting well, and their need for analgesia became very little.

By the end of the sixth month after their first attendance, five patients (25%) described complete relief from their aches; 12 patients (60%) described a significant relief regarding their aches, as they describe only an occasional mild pain or discomfort in the pre-auricular area. Only 3 patients (15%) considered not achieving any improvement regarding their pain symptoms, they were convinced of the importance of having psychological advice and so referred to a specialist psychiatrist who has a special interest in facial pain and psychosomatic disorders. Two of them achieved a significant improvement upon using tricyclic antidepressant therapy, but the third one is still experiencing pain in the myofacial structures, and not describing any improvement upon using the medical therapy prescribed for him.

## DISCUSSION

The International Association for the Study of Pain (IASP) defines pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage'. From this definition we can conclude that pain is an outcome of

different components that lead to the perception of pain, which is believed to be a psychophysiological experience that occurs when a subject is hurt in body or mind.

Pain of emotional origin is common, especially in the orofacial region, and it is clinically and professionally not acceptable to assume that the patients complaints are something they do imagine. Also it is well known now that in most pain conditions the same peripheral structural and biochemical disturbances are responsible for the symptoms of pain whether it is of psychogenic or organic origin, and so it is difficult to distinguish between the quality and the intensity between the two (16).

As clinicians we have to recognise that a long-standing pain condition without specific aggravating or relieving factors, and without any radiological or neurological signs should be classified as pain of psychogenic origin that is lacking any organic structural origin. Myofacial pain dysfunction syndrome is a unique example representing such a group, and so such patients need to be tackled in a very sensitive way, and once diagnosis have been achieved, and the patient found not to be responding to simple analgesics, full psychological work up and professional psychological consultation should be an integral part in the management of such a patient.

Malocclusion had been indicated as an aetiological factor, but it has never been confirmed as a cause, by any controlled trial. Bruxism and other tension relieving habits are commonly found although it seems that these habits do not have a causal relationship but are merely features of the condition. Bruxism, producing muscle cramp and overloading of the joint, had been considered to be difficult to sustain without any pathophysiological evidence, especially when considering the greater percentage of asymptomatic bruxers. Lack of posterior support and minor traumatic injuries to the joint had been claimed to be contributory factors, but there is no strong evidence available to support such claims (17).

An occlusal splint, which provides simultaneous points of contact with smooth lateral guidance to be worn at night, might be elected to treat TMJ pain. Some patients gain relief, but there is no evidence that occlusal adjustment is more effective than any other placebo, but we should keep it in mind that such treatment might lead to a state of occlusal hyperawareness in some patients, the thing that might worsen the condition (2).

For successful and systematic management, a proper and comprehensive medical and family history should be taken, aiming to find out any adverse life events or any emotional disturbance. Also, any dental disease including sensitive carious teeth or pulpal inflammation should be treated, but any major restorative dental procedures such

as extensive bridgework should be postponed, because that might complicate the diagnosis and subsequent treatment.

Finally, I have to state that the management of facial pain needs team work, and the best way to apply this is through the establishment of multidisciplinary facial pain clinics that should consist minimally of oral surgeon, restorative dentist, a liaison psychiatrist and a clinical psychologist. Also, training programs for medical and dental practitioners in the field of management of facial pain is very essential because many patients might be misled either at the primary or secondary care levels, and a facial pain patient might end up with unjustified removal of impacted wisdom teeth, or most seriously it may be assumed that the patient is exaggerating, whereby the patients is ignored and left in agony. It is a fallacious practice to assume that the patients' complaint is imaginary.

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# Complementary and alternative medicine training in medical schools: Half of residents and professors agree that it should be taught

**Selcuk Mistik, M.D**

Assistant Professor, Erciyes University Medical Faculty,  
Department of Family Medicine, TR-38039, Kayseri, Turkey.

**Dilek Toprak, M.D**

Assistant Professor, Kocatepe University Medical Faculty,  
Department of Family Medicine, TR-03200, Afyon, Turkey.

**Cem Evereklioglu**

Assistant Professor, Erciyes University Medical Faculty,  
Department of Ophthalmology, TR-38039, Kayseri, Turkey.

**Ahmet Ozturk**

Statistician, Erciyes University Medical Faculty,  
Department of Biostatistics, TR-38039, Kayseri, Turkey.

**Correspondence:** Dr. Selcuk Mistik, Erciyes University Medical Faculty

Department of Family Medicine. TR-38039, Kayseri, Turkey

Phone: +90-352-4374937 (23851), Fax: +90-352-4375285, Email: smistik@erciyes.edu.tr

## ABSTRACT

**Aims** - To evaluate the knowledge and attitudes of the academic doctors of orthodox western medicine (OWM) towards complementary and alternative medicine (CAM) and opinions on inserting CAM methods in medical curriculum.

**Methods** - A questionnaire comprising of 12 items was administered to every third doctor from the list of residents and Professors of Erciyes University Medical Faculty.

**Results** - Acupuncture (90.7%), herbal therapy (62.5%), and massage (60.5%) were the most frequently known CAM methods. Thirty-seven doctors (18.9%) interested in CAM, and three doctors (1.5%) had a course on a kind of CAM. Ninety-nine doctors (50.7%) suggested any CAM method in case of the existence of an incurable disease. One hundred and sixteen (59.4%) stated that CAM methods must be licensed in Turkey. If CAM methods were licensed, 76 doctors (38.9%) stated that they would suggest any one of them. There were 151 doctors (77.4%) who thought that information about CAM should be given, and 93 (47.6%) thought that CAM should be taught in medical schools.

**Conclusion** - This study evaluated for the first time the opinions and attitudes of OWM academic doctors on CAM and demonstrated that OWM doctors should have basic knowledge on the indications of CAM methods, and be able to consult their patients.

## INTRODUCTION

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine. Complementary medicine is used together with conventional medicine, where alternative medicine is used in place of conventional medicine (1).

In 1992, the National Institute of Health (NIH) of the United States of America convened a meeting to discuss the major areas of alternative medicine and to direct future research activities. The group defined seven fields of alternative therapy; alternative systems of medical practice, bioelectromagnetics, diet and nutrition, herbal remedies, manual healing methods, mind/body interventions,

pharmacological and biological treatments (2).

The use of CAM by the community has recently been increasing in many countries. The percentages of people who have used CAM were 42.1% in the USA in 1997 (2). In Far East countries, there is no nation-wide random sampled or population weighted survey on the prevalent use of CAM. Because of geographical, cultural and historical differences, there might be different characteristics of CAM used in Far East countries, compared to the situation in the West. (3).

There are many other forms of CAM therapies that are not mentioned above (4,5). CAM methods are being used for different kinds of diseases in different parts of the world such as multiple sclerosis, atopic disorders, menopause,

liver disease, epilepsy, cancer, cardiovascular disease, inflammatory disease, and many others (6-16).

Medical practice in Turkey dates back to ancient times. Almost exclusively, people not educated in conventional medicine practice CAM in Turkey. CAM practices cover a wide spectrum regarding herbal prescriptions. Most people are using herbal therapy in Turkey mainly for cancer, constipation, obesity, diabetes mellitus, hypertension, common cold and many other diseases. There is yet no valid data on the referrals of patients to CAM practitioners by orthodox western medicine (OWM) doctors.

The aim of this study was to investigate the knowledge and attitudes of the academic doctors of orthodox western medicine towards complementary and alternative medicine, and opinions on inserting CAM methods in medical curriculum.

## SUBJECTS AND METHODS

Erciyes University Medical Faculty, located in Kayseri Province, Middle Anatolia, has four separate hospital buildings with a capacity of 1395 beds. There are 367 residents and 226 Professors working in the University Hospital.

### *Questionnaire*

A questionnaire of 12 items was prepared and given to the academic doctors of Erciyes University Medical Faculty following the visit of Korean Oriental Medical Service Team Abroad (KOMSTA) in October 2002. The questionnaire was performed by random sampling of the doctors. One of the professors, and two residents did not respond to the questionnaire. The knowledge and the indications of 14 different complementary and alternative medicine therapies were asked. The CAM therapies are selected from a glossary prepared by the National Institute of Health (1).

These CAM therapies were;

1. Acupuncture
2. Aromatherapy
3. Ayurveda
4. Chiropractic
5. Diet supplementation
6. Electromagnetic field
7. Herbal therapy
8. Homeopathic
9. Massage
10. Naturopathic
11. Osteopathic
12. Qi-gong
13. Reiki
14. Therapeutic touch

The respondents answered the following questions;

1. The source of knowledge, and whether they are interested in any of these;
2. Whether they have had a training course on these, and their patients' level of knowledge about these CAM methods and which one it is;
3. Whether they have suggested any of these, and what they think about the usefulness of these methods;
4. The presence of knowledge about anyone performing one of these methods;
5. Whether they know some subjects who think that the method has been useful;
6. The use of herbal medicine by their patients and its name;
7. Whether they or their friends and the people they know use any kind of herbal therapy or any CAM methods, which have not been mentioned;
8. Whether they have used any of the mentioned CAM methods;
9. Whether they would suggest the use of CAM for the treatment of incurable diseases;
10. The knowledge of any CAM method, which is licensed in any country, and whether these should be licensed in Turkey;
11. Which institution should give the license, and whether they would suggest any if it is licensed;
12. Whether there should be some lectures or courses to teach CAM methods in the undergraduate curriculum of the medical faculty.

### *Sample*

The questionnaire was completed by 195 doctors. One hundred and thirty four (68.7%) were men and 61 (31.3%) were women. The mean age of the doctors was 32.3±7.1 (range, 22-62 years). The questionnaire was given out to almost all branches of medicine, where the most frequent ones were Medicine (14.8%), General Surgery (9.7%) and Paediatrics (7.6%).

### *Ethics Committee approval*

Erciyes University Medical Faculty Ethics Committee does not require consent for surveys.

### *Statistical analysis*

Statistical analysis was performed using SPSS statistical package (Version 11.0, SPSS Inc., Chicago, IL, USA) for Windows. Chi-square tests were used to determine the differences between the groups. The level of statistical significance was set at  $p < 0.05$ .

## RESULTS

### *General information*

Acupuncture (90.7%), herbal therapy (62.5%), and massage (60.5%) were the most frequently known CAM methods (%95 CI: %86-%94, %55-%69, and %53-%67

respectively). Acupuncture was mainly known to be used for pain, obesity, and giving up smoking. On the other hand, herbal therapy was used for gastrointestinal tract diseases, dermatological diseases, and obesity. The use of massage was stated as for pain, psychiatric disorders, and physical therapy and rehabilitation diseases (Table 1). The source of information was mass-media (69.7%),

**Table 1.** Study group's ideas about the use of CAM methods

CAM Method	Spectrum of use according to the study group
Acupuncture	Pain Obesity Giving up smoking Psychiatric disorders Physical therapy and rehabilitation disorders Dermatological diseases Others
Aromatherapy	Dermatological diseases and skin Psychiatric disorders Pain Obesity
Ayurveda	Psychiatric disorders Obesity Others
Chiropractic	Pain
Diet	Diabetes Mellitus Obesity Hypertension Malnutrition Cardiovascular diseases Urinary tract diseases Others
Electromagnetic fields	Psychiatric disorders Pain Others
Herbal therapies	Gastrointestinal tract diseases Dermatological diseases Obesity Urinary tract diseases Cancer Pain Diabetes Mellitus Hypertension Others
Homeopathy	-
Massage	Pain Psychiatric disorders Physical therapy and rehabilitation disorders Obesity Cardiovascular diseases Others
Naturopathy	Psychiatric disorders
Osteopathy	Pain
Qi-gong	-
Reiki	Psychiatric disorders Others
Therapeutic touch	Psychiatric disorders Pain Others

friends (15.8%), patients (6.6%), and seminars (3.0%). Thirty-seven doctors (18.9%) were interested in CAM. Two doctors (1.0%) had a course on acupuncture and one (0.5%) on Reiki. Eighty-two doctors (42.0%) were asked to give some information on CAM. **Suggestion of CAM** Thirty-five doctors (17.9%) suggested a CAM method to their patients. Acupuncture was suggested to 11 patients for obesity, chronic pain, post-herpetic neuralgia, migraine, disc hernia, peripheral facial paralysis, and for giving up smoking. Herbal therapy was suggested for 10 patients. Garlic for hypertension, senna for constipation, fennel for infantile colic were suggested by doctors. Diet supplementation was suggested to 7 patients for diabetes mellitus, hypercholesterolaemia, obesity and polycystic ovary disease. In the evaluation of the usefulness of CAM methods, 40% stated them as useful (Table 2). There were some significant differences when gender was considered, where women stated that CAM was more useful ( $p < 0.05$ ).

**Table 2.** Evaluation of usefulness of CAM

CAM	n = 195	%
Is useful	78	40.0
Has no effect	27	13.8
Is harmful	3	1.5
No idea	76	38.9
Unsure	11	5.6

**Use of CAM**

Thirty-four doctors (17.4%) tried a CAM method for themselves at least once. They tried acupuncture for obesity, disc hernia, migraine and headache, electromagnetic fields for joint pain, Reiki for tinnitus, herbal therapy for flu (peppermint, lemon), hypertension (garlic, hawthorn vinegar), hair loss (nettle), stress (thyme), constipation and dyspepsia (licorice), urolithiasis (corn tassel), and massage for back pain and headache.

There were sixty-five doctors (33.3%) who have patients using herbal therapies. Ninety-nine doctors (50.7%) suggested any CAM method in case of the existence of an incurable disease. In our study group, women stated that they would suggest CAM more in case of incurable diseases ( $p < 0.05$ ).

**Licensing CAM**

Fifty-seven doctors (29.2%) knew any kind of CAM, which was licensed. Acupuncture was the most known CAM method that was licensed, and it was thought to be licensed in the United States, China, Korea, Japan, Austria, Germany, and Turkey.

One hundred and sixteen (59.4%) doctors stated that CAM

**Table 3.** Institution for licensing

Institution	n = 195	%
Ministry of Health	117	60.0
Universities	69	35.3
Private institutions	4	2.0
Other	2	1.0
Combination	3	1.5

**Table 4.** CAM methods that will be suggested if licensed

CAM Methods	Number of doctors	%
Acupuncture	50	25.6
Herbal therapy	30	15.3
Ayurveda,	7	3.5
Diet supplementation	7	3.5
Massage	6	3.0
Aromatherapy	4	2.0
Electromagnetic fields	4	2.0
Reiki	2	1.0
Osteopathic, reflexology, apitherapy, hot spring water	1	0.5

**Table 5.** Comparison of attitudes and opinions of residents and Professors on CAM

	Residents		Professors		$\chi^2$	p-value
	n	%	n	%		
Interested in CAM	22	17.7	15	21.4	0.191	> 0.05
Patients asked for information on CAM	54	43.5	28	41.8	0.007	> 0.05
Have referred patients to CAM	25	20.2	10	14.7	0.549	> 0.05
CAM is useful	52	43.0	25	36.2	2.789	> 0.05
Used CAM for themselves	20	16.4	14	20.0	0.188	> 0.05
Would suggest CAM for incurable diseases	65	54.2	34	49.3	0.247	> 0.05
CAM methods should be licensed	76	65.5	39	59.1	0.496	> 0.05
Would suggest CAM if licensed	47	46.1	29	48.3	0.013	> 0.05
Medical students should be informed on CAM	99	82.5	51	72.9	1.927	> 0.05
Medical students should be trained on CAM	64	54.2	28	41.8	2.174	> 0.05

methods must be licensed in Turkey. The most common preferred institution for licensing CAM methods was the Ministry of Health (Table 3). If CAM methods were licensed, 38.9% of doctors stated that they would suggest any one of them (Table 4).

**CAM Training**

There were 151 doctors (77%) who thought that information about CAM should be given, and 93 (48%) thought that CAM should be taught in medical schools. There were no statistically significant differences in the evaluation of the residents and the Professors' attitudes and opinions on CAM ( $p>0.05$ ) (Table V).

**DISCUSSION**

**Statement of principal findings**

Acupuncture, herbal therapy and massage were the most frequently known CAM methods in our study group. Although only 18.9% of doctors were interested in CAM, 77.4% thought that information about CAM should be given, and 47.6% thought that CAM should be taught in medical schools.

**Strengths and limitations of the study**

The present investigation is the first study evaluating the opinions and attitudes of OWM academic doctors on CAM. This paper provides a basic evaluation of CAM by OWM academic doctors, and there is no previous data on this subject. In addition, the response rate of the study group was very high.

On the other hand, this study has three limitations. First, although the study may represent our medical school, it might not be representative for all of the medical schools in Turkey. Second, the recent performance of an Oriental Medical Team could have a positive influence on the opinions as well. Finally, the questionnaire was not validated.

**CAM use in other countries**

There are a number of CAM methods, which are being traditionally used in Turkey (17). Yet, there are no lectures or courses on CAM in medical schools. It has been stated that the CAM is now taught in 60% of medical schools in the United States of America. Indeed, many hospitals have created or are in the process of creating programs that incorporate these disciplines. Whether physicians prescribe CAM or not, they need to have a basic understanding and knowledge regarding its possible benefits and limitations (18). In our study group, giving information and training on CAM was accepted with a high percentage.

**Strength and weakness in relation to other studies**

Witkowski and Parish have stated that referral of patients

to practitioners of CAM is often avoided because of fear that a poor outcome might result in legal action (19). Berman et al. have reported that at least 10% of the physicians receive one or more patient requests for referral for CAM therapies (20). In our study, 17.9% of doctors have suggested CAM therapies to their patients, upon the requests of the patients. The referrals are not directly made by the physicians. This is probably due to the hesitation of referring patients to some kind of practices that they have very limited information.

Jump et al. have reported that 34.8% of the physicians had personally utilised at least one of the CAM therapies (21). In our study, there is less utilisation of CAM therapies by OWM doctors (17.4%). This low rate of utilisation could be an indicator of the prejudice against CAM therapies.

Yamashita et al. stated that patients who have used CAM in the last year have evaluated the effectiveness as follows; 'effective' 58.4%, 'not effective' 10%, and 'do not know' 31.6% (3). In our study, less doctors (39%) stated that CAM was useful.

### Implications

The kind of CAM therapies which are licensed vary from country to country. There is much researches being carried out on CAM, where CAM therapies are compared to orthodox western medicine methods. The use of CAM is very common especially when OWM is not very effective. Therefore, the Ministry of Health or any institution that is assigned could prepare guidelines containing the spectrum of use of CAM, and the scientific data that is available about CAM therapies. It might then be easier for OWM doctors to decide whether they could suggest CAM methods or not, and it would be possible to give the most convenient information about indications and contraindications of CAM.

Because of the widespread use of CAM by patients and the growing scientific evidence that certain CAM therapies are more effective than orthodox alternatives, it has been stated that CAM education must be integrated into medical education in allopathic and osteopathic schools in the near future (22). There is an increase in the use of CAM methods in Turkey as well.

### CONCLUSION

medical doctors should have a basic knowledge on the indications of CAM methods, and be able to consult their patients when they ask about them without prejudice. It seems that inserting lectures on CAM in the medical curriculum could be a necessity in the near future.

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# Methods of management in hospital of Shiraz University of Medical Sciences: the development of suitable pattern

S.H.Kavari, PhD

Assistant Professor of Health management

**Correspondence:** Seyed Habibollah Kavari, Shiraz Iran

**Key words:** management methods, hospitals, leadership styles

## ABSTRACT

**Background** - It is of great importance that hospital managers utilise confirmed theories of leadership styles to improve the services offered to patients.

**Objective** - A descriptive-analytical study was conducted to investigate leadership styles in hospitals affiliated with the Shiraz University of Medical Sciences and Health-Care Services of the Fars Province.

**Methods** - Thirteen hospitals were selected, and the opinions of 315 chiefs of units and wards were collected and studied using four questionnaires.

**Results** - 1) Managers and hospital personnel believed that the non-interfering leadership method is the most efficient; 2) there was a significant correlation between the managers' performance, job satisfaction and methods of leadership and, 3) according to data analysis, hospital personnel had the highest rate of job satisfaction when managers applied the non-interference method and evaluated the managers' performance as "very good".

**Conclusion** - Increasing the quality of leadership could therefore, have a direct effect on job satisfaction of the personnel, leading to increased quality of services offered to patients. The findings of this study could also show the way to new management courses for health-and- treatment- service- related fields, hence the training of well-organised managers.

## INTRODUCTION

The incompetence of managers in treatment environments, such as hospitals, is an issue commonly faced. In such settings, one could witness well-motivated and devoted personnel who have become discouraged due to improper and uneducated leadership. Such frustration has resulted in personnel inefficiency, which in turn, has a direct effect on the health and lives of patients referred to these centers. Hence, what seems to be of great importance is that managers utilise confirmed theories of leadership styles in order to improve the quality of services offered to patients (1, 2).

The terms "leader" and "leadership" have been long through history (3,4). Many definitions of leadership refers to a member of a group, who possesses outstanding skills not found in other members. He is introduced as a leader, who is obeyed and followed. In fact as Loveridge et al. (5) mentioned, leadership refers to one's ability to influence others in order to achieve a certain objective. So, a leader, is one who can convince others to act in such a way to achieve a certain goal (6). Jasbi (7) also mentions that a leader is, compared to the other members of a group, a more active person, capable of influencing others and consequently gaining more importance and attention.

Similarly, as related to the field of medical studies, Tappen (8) stated that acquiring leadership and related sciences, is a crucial part of the requirements of health and treatment services. Since such centers play a critical role in the lives of people, it is necessary for their leaders to be skilled and competent. Ghabeljoo (9) acknowledged that in addition to awareness of the basics of planning and organization, a hospital manager should have information regarding the best and most popular methods of leadership styles, and be able to recognize the responsibility to organize individuals and guide them through the process of the job, leading them all towards the completion of the requirements of the sections.

The importance of the issue of hospital leadership has led the researchers to conduct a study to investigate leadership styles in hospitals affiliated with the Shiraz University of Medical Sciences and suggesting a suitable model of management; recognize a method to improve hospital leadership styles in the country by increasing the managers' ability to direct treatment units; to explore leadership styles through those personnel who have evaluated their managers favorably and have the most job satisfaction; and propose a model that could help to improve the present state of leadership in the Fars province as well as nationwide, so that policy—and decision-makers as well as curriculum planners with

the health and treatment organization of the country, could help the centers benefit from more effective and educated managers.

## MATERIALS AND METHODS

The present study is a cross-sectional descriptive-analytical field study, carried out on all affiliated hospitals with the Shiraz University of Medical Sciences and Health-Care Services of the Fars Province. The participants of this study were all 315 chiefs of units and wards (intermediate manager) who worked under the direct supervision of the hospital manager and had at least one year of working experience in the hospital and one year of experience under the supervision of the particular manager. The 13 managers themselves participated as well. They were all official government employees. The samples were selected from the following educational and clinical hospitals: Ali-Asghar, Ghotboddin, Khalili, Zeynabieh, Hafez, Razi, Shahid Faghihi, Hazrat Fatemeh Heart Center, Ebneh Sina, Shahid Chamran, Nemazi, and Shooshtari hospital.

The instruments used for collection of data for this study were four questionnaires, distributed among managers and personnel of the educational and clinical hospitals. The questionnaires were versions of "The Ohio State Leader Behaviour Questionnaire", and the Job Description Index "by Smith Kendall, Hulin and Minnesota". The questionnaires were all tested and analysed so as to ensure their reliability and validity.

The first questionnaire was used to determine leadership styles as the managers judged themselves, including 6 items regarding the demographic characteristics of the words and 30 items about the managers' own understanding of consideration and structural priority.

The second questionnaire was applied to determine leadership styles by the personnel working under the direct supervision of the hospital manager, and was a copy of the first one, differing in only wording to refer to the personnel themselves. It included two sections: one aiming at collection demography information of the personnel (6 items), and the other given to determine the personnel's understanding of the managers' leadership style as related to consideration and structural priority (30 items).

The third questionnaire was distributed aiming at determining the job satisfaction of personnel as relate to the leadership style of the manager, with the purpose of discovering the leadership style. This questionnaire included two separate sub questionnaires, one including 20 items, designed to show viewpoints of personnel regarding the hospital managers' performance, and the

other, also including 20 items, used to determine the personnel's job satisfaction as relate to their manager's performance.

The data collected by these four questionnaires was then analyzed by SPSS. EPI. In order to determine leadership style, managers' functioning, and personnel satisfaction from leadership, Pearson's correlation, t-test, ANOVA, Z-test, Kriskal-Wallis, Cronbach alpha, Duncan's and Mann-Whitney tests were applied.

## RESULTS

The results of the first questionnaire shows that 92.5% of the managers under study (7.7% females and 92.3% males, all married) believed that they are exercising a democratic leadership style. These managers had all participated in in-services training classes and 15.4% of the managers of this group held a high school diploma, while 69.2% and 15.4% of the remained held BS and MS/PhD degrees respectively. The management experience of 30.7% of the members of this group were between 3-5 years, 30.7% between 6-9 years, 38.6% between 6-9 years, and the remaining (38.6%), 10 or more years. Among the total number of managers in this study, 7.7% utilized the non-interference style, which, not having participated in in-service training classes and held a university diploma or BS degree and had work experience of 1-15 years.

The results obtained by the second questionnaire indicate that the personnel classified their managers as dictators, democratic, or non-interfering leaders. The marital status of these participants was 20.1% as single, and 79.9% as married. As judged by 8.1% of the personnel (6.1% of them were males and 9.7% females), 15.4% of the managers were dictator leaders. The educational level of these staff members was 3.3% at lower levels than high school, 6.5% at high school level, 9.7% at BS degree or higher, and they had worked under the supervision of the present manager for 1-5.5 years (10.7%), 6-10.5 years (3.4%) and 11 years or more (3.5%).

Among the personnel, 41.3% of them (53.4% males and 32.2% females), judged 7.7% of their managers as democratic. Their educational level was 8%, 49.2%, 42.3%, 29.3%, 41.7%, at lower levels than high school, high school diploma, college diploma, BS, and MS or higher degrees respectively. Their working experience under the supervision of the present managers was 1-5.5 years (38.3%), 6-10.5 years (38.3%), and 11 years or more (58.6%).

The remaining personnel judged that 76.9% of the managers to be non-interfering. This group consisted of 40.5% males and 58% females who had the following educational degrees: 16.7%, 44.4%, 47.7%, 61%, 41.6% were lower levels than high school, high school diploma, college

diploma, BS, and MS or higher degrees respectively. These staff members had worked under the supervision of the present manager for 1-5.5 years (50.5%), 6-10.5 years (58.3%), and 11 years or more (37.9%).

The results of the third and fourth questionnaires indicated that 15.3% of the personnel who had judged their managers as dictator leaders, 7.7% of the personnel calling their managers, democratic and 46.2% of those who had judged them as non-interfering, had evaluated their managers as "good" and were satisfied with their job, while 30.8% of the latter group had evaluated their managers as "poor", and had low job-satisfaction. This study suggests that the leadership system of hospitals in this area suffers from the lack of effective methodology causing a stressful working environment, reducing the personnel's efficiency.

## DISCUSSION

The results show that 53.8% of the personnel held a BS degree. Over 48.4% of the personnel participating in this study had a work experience of 16-25 years in the hospital, which indicates their capability of making sounder judgments regarding the inquiries. Among the total number of personnel, 54.7% had worked for 1-4 years under the supervision of a particular manager.

As for the managers, 60.2% of them held a BS degree, 30.7% of which had worked for over 20 years in the hospital, and 60% had worked as hospital managers for 5-10 years. This work experiences their acceptable familiarity and knowledge of hospital environments and management. The findings also show that the managers' leadership style was significantly related to the personnel's:

1. Gender ( $df=2$ ,  $x^2=13.97$ ,  $p=0.092$ ).
2. Age ( $df=6$ ,  $x^2=16.69$ ,  $p=0.01$ ).
3. Marital status ( $df=6$ ,  $x^2=14.27$ ,  $p=0.0070$ ).
4. Education ( $df=8$ ,  $x^2=34.88$ ,  $p=0.003$ ).
5. Work experience ( $df=6$ ,  $x^2=10.04$ ,  $p=0$ ).

The work experience of the personnel under the supervision of the present manager showed no significant relation to the managers' leadership styles ( $df=4$ ,  $x^2=7.97$ ,  $p=0.09$ ). The findings also indicate that the views of managers and personnel regarding structural and consideration priority were significantly different. Also, there was a significant difference between managers' performance job satisfaction. In other words, the personnel had evaluated their non-interfering managers as good and were satisfied.

Based on the information provided by the above-mentioned findings, and that obtained through a Delphi questionnaire given to managers and university management professors and instructors, the model personnel as figure. The points mentioned below were all considered thoroughly for the development of the model:

- a. The required information were gathered through hospital managers and personnel, such as nursing managers, supervision, employment and financial

managers, head-nurses, and other intermediate managers supervised by the hospital manager.

- b. Based on the findings and model provided by The Ohio Study, the present model was proposed.

In the first stage of development the model, the qualification and other required characteristics of hospital managers were analyzed and necessary points and measures were highlighted. In the second stage, attention was focused on the foundations of effective and scientific management such as programming, leadership and guidance, and interactive control. The third stage, and the most fundamental one, was the recognition and analysis of the conditions and situations, including the characteristics of the manager, personnel, working environment and organization, as related to the two leadership dimensions of structural priority and consideration. The last stage was to introduce a leadership style in accordance with the personnel assessments regarding job satisfaction from the managers' leadership, and the points given to structural priority and consideration. The proposed model eliminates the problem of the Ohio Model, taking into account situational factors and their effects on leadership efficacy, so that one leadership style might shift to another depending on the above-mentioned factors. It is suggested that researchers use the model to investigate leadership styles in all medical universities, hospitals, and health-treatment centers of the country.

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## Public health schools in Iraq

In our country, public health is mainly taught within medical schools.

The question has arisen as to whether the medical schools are the proper place for this. The important developments in the field of public health world wide, need to be taken into consideration in order to strengthen public health education in our region and country specifically.

### 1) the interdisciplinary characteristics:

Public health is now bringing medical science, management science, behavioural and social sciences together. Through this we achieve better understanding of the factors that influence health and illness, and also how to change these factors toward better health. We need to stress today the importance of bringing social sciences more strongly into public health to enhance our understanding of how the social environment, including social, economic, cultural and political factors will influence health status.

**2) Public health used to focus on describing population health, risk factors and health determinants.** Now it is focusing more on interventions which can improve public health. Such interventions are focusing on questions that need to be addressed within the specification of a particular society. Such questions would focus on how to change smoking behaviour, changing policy on reproductive health and how to influence health sector reform. 3) Obtaining knowledge from the community:

The relationship of public health to the community is taking the form of partnership to all levels. This is achieved through bringing community knowledge into solutions developed to address the public health problems.

**4) Public health is becoming more evidence based,** which is preferred in public health practice regimens collaborative research efforts by interdisciplinary teams.

From the above overview, in addition to the consideration of the basic principles of APHA definition of Public Health, we can conclude that medical schools cannot be considered as ideal in dealing with all Public Health issues. The solution is providing specific schools of Public Health but keeping in mind the important links with medical schools. Disciplines such as epidemiology, biometry, population health behaviour and social sciences, health management and policy could all be encompassed under the schools of Public Health.

The collaboration with other disciplines can be achieved through schools of Public Health by having linkages with medicine, environmental sciences, economics, sociology, engineering, agriculture science, business and others. This is what we need in fact which will help in dotting the is and crossing the ts. This is what we need to assist in providing a comprehensive public health policy.

## Case study - Ethyl malonic Aciduria

I am a pediatrician in the European Gaza hospital in Gaza Palestine. I have diagnosed a case of ethyl malonic aciduria with nephrotic syndrome.

The patient is a female, age 1 3/12 years and she presented with vasculopathy as patechia and accarocyanosis, which increased with pressure especially on the application of a tourniquet. She has groin dermatitis, hypotonia, and brisk deep reflexes with clonus. She has delayed mental and motor milestones. CT scan disclosed brain atrophy with possible brain degeneration. She has chronic diarrhoea and metabolic acidosis.. Urine analysis showed +++ protein in urine.. There were no signs of sepsis and blood culture and urine culture was negative . CBC including platelets are normal. Coagulation profile, kidney and liver functions are normal. Because we lack appropriate facilities in the lab, the ethyl malonic aciduria is not documented yet. We used to send the samples to Israel but because of the closure of the road this was not done for this case. This is the fifth case of such a condition in our hospital but the first of possible nephrotic syndrome.

Dr. Ahmed Mansour Jebara

## NEWS BRIEFS

### Urgent medical assistance still required in Pakistan

Some remote communities still have not been reached by relief workers and those that have been reached still have urgent requirement of medical supplies and expertise, as well as shelter and food. With winter rapidly approaching many communities face a desperate situation.

Dr Manzoor Butt of Rawalpindi is assisting on the ground and is now attached to the 10 Corp Pakistan Army and is a good conduit for providing assistance where it is needed. This can be in the form of medical assistance as well as catering to the human needs of food and shelter. He can be reached at: manzor60@yahoo.com if anyone is able to help.

The Pakistan situation is worse than that of the tsunami earlier in the year as far as needs of survivors are concerned so we urge those who are able to assist, to do so.

## Avian influenza - situation in Thailand, Indonesia

24 October 2005

The Ministry of Public Health in Thailand has confirmed an additional case of human infection with H5N1 avian influenza. The patient, a 7-year-old boy from Kanchanaburi Province, developed symptoms on 16 October and was hospitalized on 19 October. He is recovering. He is the son of a confirmed case who died on 19 October.

These are the first two confirmed cases in Thailand in a year. Since the start of the outbreaks in Asia, Thailand has confirmed 19 cases, of which 13 have been fatal.

### Indonesia

The Ministry of Health in Indonesia has confirmed two additional cases of human infection with H5N1 avian influenza. The first newly confirmed case is a four-year-old boy from Sumatra Island in Lampung Province. He developed symptoms on 4 October, was hospitalized, recovered fully, and has returned home.

This case is the nephew of the 21-year-old man from Lampung, who was reported on 10 October 2005. Although the two cases are related and lived in the same neighbourhood, human-to-human transmission is considered unlikely.

The second newly confirmed case was a 23-year-old man from Bogor, West Java. He was hospitalized on 28 September and died on 30 September. Epidemiological investigations uncovered exposure to infected poultry as the likely source of infection in both cases. To date, Indonesia has reported 7 human cases of H5N1 avian influenza. Four of these cases were fatal.

## Avian influenza - new areas with infection in birds

13 October 2005

Tests conducted by the World Organisation for Animal Health (OIE) have today confirmed the presence of highly pathogenic H5N1 avian influenza in samples taken from domestic birds in Turkey.

In Romania, investigations of recent poultry deaths have, to date, identified the H5 subtype of avian influenza virus. Further testing is under way to determine the strain and whether

the virus is highly pathogenic. Authorities in the two countries have undertaken control measures as recommended by OIE and FAO. WHO is sending diagnostic reagents and other supplies to support testing in national laboratories. Viruses from both outbreaks have been sent for further analysis to the Central Veterinary Laboratory Agency-Weybridge (UK), which is an OIE/FAO reference laboratory. Viruses are also being sent to WHO reference laboratories for comparison with human H5N1 isolates from Asia.

### Public health implications

The spread of H5N1 to poultry in new areas is of concern as it increases opportunities for further human cases to occur. However, all evidence to date indicates that the H5N1 virus does not spread easily from birds to infect humans. WHO advises countries experiencing outbreaks in poultry to follow certain precautions, particularly during culling operations, and to monitor persons with a possible exposure history for fever or respiratory symptoms. The early symptoms of H5N1 infection mimic those of many other common respiratory illnesses, meaning that false alarms are likely.

The WHO level of pandemic alert remains unchanged at phase 3: a virus new to humans is causing infections, but does not spread easily from one person to another.

WHO continues to recommend that travellers to areas experiencing outbreaks of highly pathogenic H5N1 in poultry should avoid contact with live animal markets and poultry farms. Large amounts of the virus are known to be excreted in the droppings from infected birds. Populations in affected countries are advised to avoid contact with dead migratory birds or wild birds showing signs of disease.

Direct contact with infected poultry, or surfaces and objects contaminated by their droppings, is considered the main route of human infection. Exposure risk is considered highest during slaughter, defeathering, butchering, and preparation of poultry for cooking. There is no evidence that properly cooked poultry or poultry products can be a source of infection.

Countries located along migratory routes need to be vigilant for signs of disease in wild and domestic birds. Recent events make it likely that some migratory birds are now implicated in the direct spread of the H5N1 virus in its highly pathogenic form.

## Yellow fever in Senegal

20 October 2005

As of October 11, the Senegalese Ministry of Health (MOH), has reported two fatal laboratory confirmed cases in the district of Goudiri: a 20 year old man and a 10 year old girl died on 25 Sep 2005 and 30 Sep 2005, respectively. Results of the epidemiological investigation are pending. The MOH with WHO and UNICEF support has organized a mass vaccination campaign in Goudiri and the neighbouring district

## Childhood Emergencies

Omar, aged 10 months, with no previous illness and formula fed, was progressing well until 12 hours ago when he developed diarrhoea and vomiting.

He has had eight watery stools without blood or mucous and it shows no signs of improving. He has vomited four times and has shown disinterest in taking his bottle. He was last weighed a week ago at 10kg and has passed urine in the last 2 hours.

Omar usually attends a day-care centre while his parents are at work. On examination Jack looks miserable but is well nourished and shows no signs of dehydration.

His vital signs are:

Temperature 38 C (oral)

Pulse 110/min

Respiration 40/min

BP 90/60

of Kidira targeting a population of 150,000 persons, to control the transmission of disease in this region. The vaccine utilized in this immunization campaign, which started on 4 October 2005, form part of a stockpile of 3,000,000 doses of yellow fever vaccine awarded by the Global Alliance for Vaccines and Immunization (GAVI) to Senegal in 2004 to undertake preventive routine vaccination.

**Circle True or False and compare your response with the author's answers on the following page.**

### Question 1

Gastroenteritis in infants is potentially a life threatening illness.

T / F

### Question 2

The most likely cause of gastroenteritis is Salmonella infection.

T / F

### Question 3

Omar should be removed from the day care center.

T / F

### Question 4

Omar should be admitted to hospital.

T / F

### Question 5

The primary concern is maintenance of hydration.

T / F

### Question 6

Which of the following are the classic signs of moderate weight loss (6 - 9 %) in the presence of continuing gastro-

enteritis?

- Thirst
- Irritability
- Dry mucous membranes.
- Abnormal pinched skin test.
- Nil urine output

### Question 7

Omar vomited once more after the examination. You estimate his dehydration is mild at 5%. Which of the following steps of management would you follow.

- Administer an anti-emetic to stop vomiting.
  - Administer an anti-diarrhoea preparation.
  - Continue formula feeding.
  - Give oral rehydration fluids a little at a time and often.
  - Aim to give more fluid to replace loss and consider maintenance in the first six hours.
- Diarrhoea becomes worse**
- Vomiting increases, associated with a decrease in wet nappies

### Guidelines for parents to have the child reviewed are:

- The feeding deteriorates
- Diarrhoea becomes worse
- Vomiting increases, associated with a decrease in wet nappies

### FURTHER HISTORY

#### In Omar's case (weight 10kg)

- Fluid loss =  $5 \times 10 \times 10 = 500$  ml
  - Maintenance =  $100 \times 10 = 1000$  ml (24 hours)
  - Approximate average hourly requirement = 60 ml
- Aim to give more fluid in the first 6 hours, e.g. 50 ml/kg = 500 ml to replace ongoing loss.**

### FURTHER READING AND REFERENCE

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Update. Medical Observer 25 April 2003; 46-57

**ANSWERS - CHILDHOOD EMERGENCIES**

**Question 1 - True**

*The very young infant with both diarrhoea and vomiting is at risk.*

**Question 2 - False**

*Gastroenteritis is usually caused by a virus particularly Rotavirus*

**Question 3 - True**

*The condition is highly infectious and children should be isolated from others until the diarrhoea has ceased. Advise about hygiene, including hand-washing and napkin disposal.*

**Question 4 - False**

*Hospital admission is not necessary at this stage and is reserved for deterioration with evidence of dehydration. The vast majority can be managed successfully with good home care.*

**Question 5 - False**

*Maintenance of nutrition and hydration is the cornerstone of management.*

**Question 3 - True**

*The condition is highly infectious and children should be isolated from others until the diarrhoea has ceased. Advise about hygiene, including hand-washing and napkin disposal.*

**Question 4 - False**

*Hospital admission is not necessary at this stage and is reserved for deterioration with evidence of dehydration. The vast majority can be managed successfully with good home care.*

**Question 5 - False**

*Maintenance of nutrition and hydration is the cornerstone of management.*

**Question 6 -**

**a) Thirst**

*The authors Agree - Thirst is a feature of dehydration. If greater than 10% loss the child is too sick to indicate this.*

**b) Irritability**

*The authors Agree - The child will be irritable, lethargic and restless with persistent fluid loss.*

**c) Dry mucous membranes**

*The authors Agree - Tears will also be absent.*

**d) Abnormal pinched skin test**

*The authors agree - At this level of fluid loss the skin will retract slowly over about 1 to 2 seconds. With severe loss, retraction is very slow (over 2 seconds).*

**e) Nil urine output**

*The authors Disagree - Urine output will be decreased significantly but is absent with severe dehydration.*

**Question 7 -**

**a) Administer an anti-emetic**

*The authors Disagree - This is with respect to good practice as it is best to encourage natural elimination of waste. Injections of anti-emetics can have severe side effects such as dystonias and seizures.*

**b) Administer an anti-diarrhoea preparation**

*The authors Disagree - The anti-diarrhoeas are usually ineffective and disrupt natural elimination of the infective organism.*

**c) Continue formula feeding**

*The authors Disagree - Milk and milk products are best ceased but in milder cases formula feeding which can be tolerated can be continued or resumed after 24 hours. In more severe cases such as Jack, it is advisable to cease bottle milk ingestion.*

**d) Give oral rehydration fluids**

*The authors Agree - It is important for the carer to persist with giving fluids despite the presence of vomiting. A useful rule is to give 40 ml every 15 minutes. The ideal fluid is Gastrolyte or New Repalyte or a WHO recommended oral replacement solution (these contain electrolytes and nutrients).*

*Alternatives are:*

*Lemonade 1 part to 6 parts of water*

*Sucrose (table sugar) 1 teaspoon to 120ml water*

*Fruit Juice 1 part to 4 parts water*

*Cordial 1 part to 16 parts water*

**e) Aim to give more fluid**

*The authors Agree - The method of assessing fluid replacement is:*

*Fluid loss (ml) = % dehydration x body weight (kg) x 10*

*Maintenance (ml/kg/24hours) // 1-3 mo = 120 ml; 4.12 mo 120 ml; > 12 mo; 80ml*

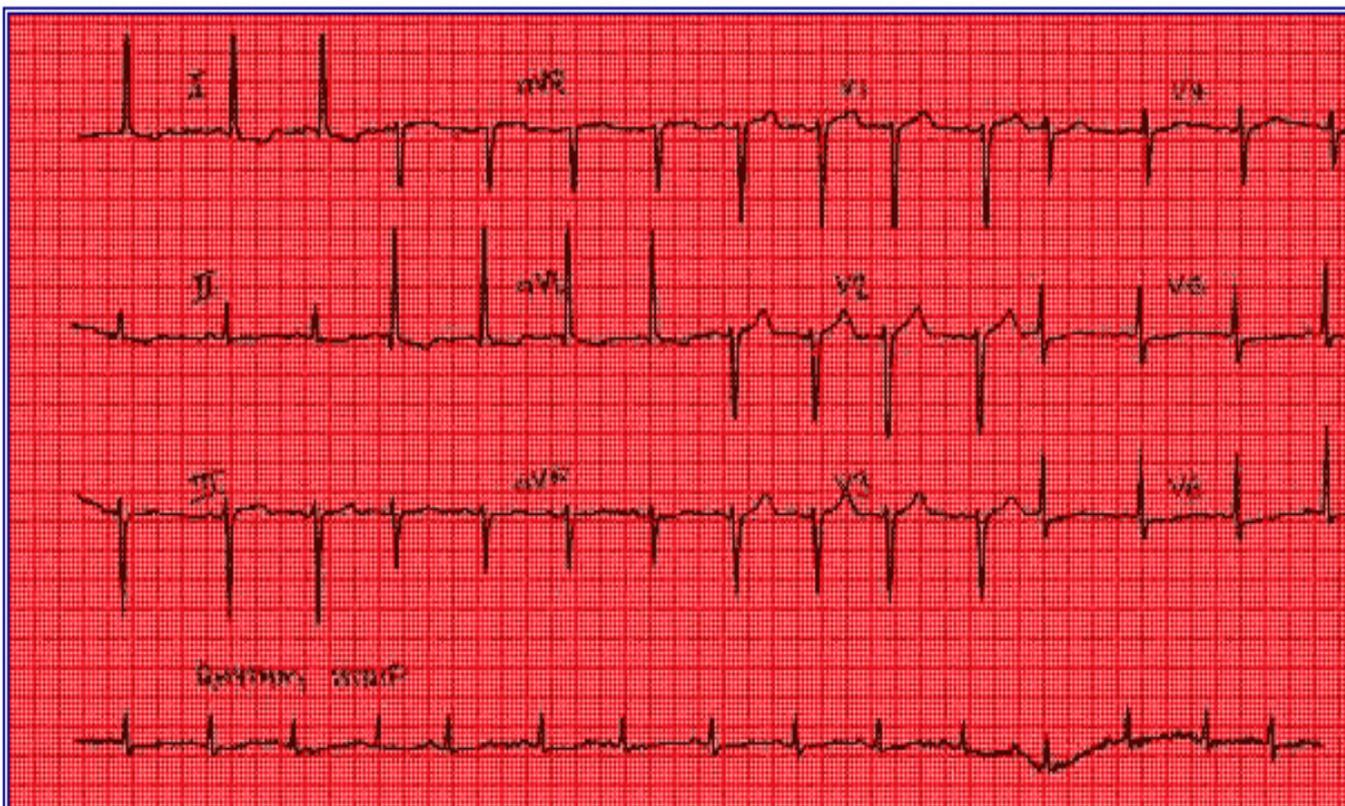
*Allow for continuing loss.*

# ECG interpretation quiz

Test your ECG Interpretation skills for the following ECGs and send your answer to [lesleypocock@mediworld.com.au](mailto:lesleypocock@mediworld.com.au)



Lead 1



Lead 2