

## النشرة الوبائية السعودية تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحقلية  
المجلد الحادي عشر - العدد الثاني - ابريل - يونيو ٢٠٠٤

### Compliance to Iron Supplementation guidelines during pregnancy among women attending antenatal clinics, Al Yamamah hospital, Riyadh, Saudi Arabia, 2004.

Iron deficiency anemia is the most common nutritional disorder in the world. Pregnant women are at especially high risk because of significantly increased iron requirements. Routine use of daily iron supplements is recommended after the twelfth week of pregnancy. However, the major obstacle to iron supplementation is compliance with treatment. Very little consistent information exists on the factors associated with non-compliance. We decided to conduct a study to assess compliance to iron supplementation and evaluate factors affecting non-compliance among a sample of pregnant women attending antenatal clinics at Al-Yamamah hospital, Riyadh, Saudi Arabia.

A cohort (longitudinal) study was conducted among pregnant women who had been booked for antenatal care during their first trimester of pregnancy (before 13 weeks) when routine booking investigations were carried out. Study participants were recruited into the study at or after 36 weeks of gestation. A blood sample was taken from each participating pregnant woman for hemoglobin estimation at recruitment to be compared with that done at booking. Data was collected using a questionnaire of two parts. The first part was filled by direct interview and included socio-demographic and life style characteristics. Assessment of compliance to iron supplementation depended only on participants' questionnaire responses to their use during the second and third trimesters. The second part documented hemoglobin concentration measured at booking (before 13 weeks) in addition to results of blood examination done at recruitment (at or after 36 weeks). Anemia was considered when hemoglobin level fell below 11g/dl. Impact of the explanatory variables on non-compliance and impact of non-compliance on Hb level was estimated as relative risks (RR) with 95% confidence intervals. Con-

(Continued on page 10)

#### INDEX

Compliance to iron supplementation guidelines during pregnancy, cont .....	10
Effect of Health Education Advice on Saudi Hajjis, Hajj 1423 H (2003 G) .....	11
Premarital testing Screening in KSA.....	13
SEB Arabic Page.....	14
Calendar .....	15
Notifiable Disease Reports.....	16

# Compliance to Iron Supplementation guidelines during pregnancy, cont ....

(Continued from page 9)

founding was controlled by logistic regression analysis. Paired t-test was used to compare the mean hemoglobin levels measured at booking and at recruitment into the study to measure the impact of compliance to iron supplementation.

Three hundred and eight (308) pregnant women between gestational weeks 36-42, were recruited into the study. Their ages ranged from 17 to 45 years (mean 27 SDxx; 95% were Saudis; illiterate women constituted 11.4%, and 27% had completed university education. Housewives constituted 88.3%.

Strict use of iron supplements during the second and third trimesters was reported by 153 (49.7%); 118 (38.3%) reported partial use; and 37 (12.0%) used no iron. Reported causes of non-compliance were mainly side effects (40.3%) and forgetfulness (32.5%). Strict compliance was found to decrease with advanced maternal age ( $\geq 35$  years) and parity ( $>6$ ), and to increase with higher educational levels (intermediate school and above) and among those who reported doing some kind of physical exercise. These differences were statistically significant. There was no difference between compliant and non-compliant women in inter-pregnancy spacing, income, work, chronic or acute illnesses and early HB level.

At booking 29.6% were anemic, with mean Hb concentration of 11.6 (SD  $\pm 1.3$ ). At recruitment into the study 33.9% were anemic, with mean Hb concentration of 11.4 (SD  $\pm 1.3$ ). The risk of becoming anemic was significantly associated with non-compliance to iron supplementation (Crude RR 2.4, 95% CI 1.78-3.25,  $P < 0.000$ ; Adjusted RR 5.4, 95% CI 2.37-12.41,  $p < 0.001$ ). By comparing non-compliance to strict and partial compliance separately, the risk of anemia was also highly associated with non-compliance. Logistic regression showed that education was the only factor associated with lower risk of non-compliance (Adjusted RR 0.71, 95% CI 0.52- 0.96,  $p < 0.01$ ).

The paired t-test showed that Hb

level increased significantly among strictly compliant women by 0.3 gm/dl (95% CI 0.085-0.514;  $p < 0.001$ ), and significantly decreased among partially compliant women by -0.36 gm/dl (95% CI -0.629 to -0.090;  $p < 0.001$ ), and among non-compliant women by -1.4 gm/dl (95% CI -1.966 to -0.917;  $p < 0.001$ ).

- Reported by: Dr. Mona A. AlAnezi, Dr. Ebtihal H. Zeinul Abdin, Dr. Randa M. Nooh (Field Epidemiology Training Program).

**Editorial Notes:** Iron supplementation is the most commonly used strategy to control iron deficiency in developing countries.<sup>1</sup> Although this is an inexpensive and effective way of

increasing hemoglobin levels, anemia during pregnancy is still a major problem in developing countries.<sup>2</sup> Poor compliance is the major obstacle. Measuring compliance is important, since iron supplementation is only effective over relatively prolonged periods and pill taking may be discontinued long before the regimen has had a positive impact.<sup>3</sup>

Research on compliance has given conflicting and inconsistent results. No uniform characteristics of a non-compliant person have been identified.<sup>4</sup> In the present study, illiteracy had a significant association with non-compliance ( $p < 0.01$ ). By comparing strict compliance and non-compliance, strict compliance de-

(Continued on page 15)

**Table 1: Compliance status according to maternal socio-demographic & lifestyle factors:**

Explanatory variables	RR	95%CI	P-value
<b>Age</b>			
<35	0.51	0.28-0.97	<b>0.041</b>
$\geq 35$			
<b>Education</b>			
University & higher	0.17	0.06-0.50	<b>&lt;0.0001</b>
Secondary	0.45	0.2-1.01	<b>0.05</b>
Intermediate	0.24	0.08-0.71	<b>0.01</b>
Primary	0.57	0.27-1.24	0.24
Illiterate	Ref		
<b>Family income</b>			
<5000	2.05	0.96-4.37	0.06
5000-10,000	Ref		
>10,000	1.56	0.44-5.47	0.445
<b>Employment</b>			
Employee	0.43	0.11-1.72	0.279
House wife			
<b>Previous pregnancies</b>			
Primiparous	Ref		
1-3	1.42	0.42-4.83	0.762
4-6	2.19	0.65-7.36	0.188
>6	3.64	1.07-12.4	<b>0.023</b>
<b>No. of living children</b>			
None	Ref		
1-3	2.25	0.68-7.45	0.164
4-6	2.93	0.86-10.0	0.068
>6	4.52	1.25-16.3	<b>0.028</b>
<b>Inter- pregnancy interval</b>			
< 1 year	0.77	0.35- 1.71	0.52
1< 2years	0.71	0.31- 1.64	0.42
2- 4years	Ref		
> 4 years	0.51	0.18- 1.45	0.19

# Effect of Health Education Advice on Saudi Hajjis, Hajj 1423 H (2003 G)

The pilgrimage to Makkah (Hajj) is an annual congregation of more than 2 million Muslims with different nationalities, languages, life styles, levels of education, and health status. The Ministry of Health (MOH) annually invests a large amount of resources in advising the hajjis in preventing diseases and promoting positive health. The health education program implemented by MOH during Hajj focuses on a number of key issues while using multiple methodologies. Although the program targets all Hajjis, Saudi hajjis constitute an important target group. This study was conducted to assess the effect of health education program on the knowledge and practices of Saudi hajjis in Hajj 1423, in order to provide information for evidence-based planning of health education programs.

A cross-sectional survey was conducted among Saudi Hajjis using a self-administered questionnaire. Sampling was done by using a three stage random cluster technique based on geographical mapping. The whole area of Mina occupied by Hajjis is divided into camps by the Ministry of Hajj, and defined camps are allocated to Domestic Hajjis. After obtaining the list of these camps, 10 such units were randomly selected. Each sampled unit was divided into 9 approximately equal squares, and out of them 2 squares were selected randomly by using random number tables. In each of the selected squares one tent was selected randomly as a starting tent, and 30 Hajjis from the square were included in the study, irrespective of gender. However, due to some non-response, logistic problems and incomplete forms, the results of 451 hajjis are being presented.

Out of 451 Hajjis, 69.4% were males, 52.5% were performing Hajj for the first time and 96.5% came with organized Hajj groups. Of all hajjis 92.2% got the advice to take the meningitis vaccine, among them 95.2% did. However, 49.6% of the hajjis were vaccinated less than 10 days before reaching Hajj area. Of the total 52.8% got the advice not to buy food from street vendors, among them 91.6% did not; 79.8% got the

advice to wash vegetable before eating among them 94.7% did; and 79.4% got the advice to wash hands before eating among them 96.1% did. Among all Hajjis 59% got the advice to use transportation means while traveling, among them 97% did; 48.1% got the advice to use umbrellas among them 47.9% did; 20.0% got the advice to use identification wristbands, among them 4.4% did; and 69.9% got the advice to drink more than 2 liters daily among them 92.7% did. Of the total, 53.4% got the advice not to use used razor blades, among them 95.9% did not; and 45.5% got the advice not to lend the used razor blades, among them 98.5% did not. Of all Hajjis 47.5% got the advice not to smoke during Hajj, among them 93% did not; and 49.7% got the advice to wear facemasks, among them 64.3% did. As given in table 1, among the 13 advices and their corresponding practices observed, 8 were statistically significant. The advice had a statistically significant association with practice for meningitis vaccination, influenza vaccination, washing vegetables before eating, washing

hands before eating, using umbrellas, consuming plenty of fluids, wearing identification wristbands, and using the facemask. As shown in table 2, the TV was the most common source of advice for ten messages, and second most common for three other advices.

– Reported by: Dr. Abdullah Aljoudi, Dr. Randa Nooh, Dr. Abdul Jamil Choudhry (Field Epidemiology Training Program).

## Editorial note:

Health education remains the backbone for prevention of most hajj associated health problems. Well-designed health education programs are probably the best tools that can be used to rectify undesirable behaviors among Hajjis.<sup>1</sup> It is evident from the study that a large proportion of the participating hajjis had received some kind of message regarding the health related behaviors studied, with the exception of influenza vaccine and wearing identification wrist bands. Similarly, the practice for most of the healthy behaviors was also fairly high except for the same issues along with

(Continued on page 12)

**Table 1: distribution of hajjis according to the health education advice received and related practices during Hajj 1423 (2003 G)**

Health Education advised	Got advice (N=451)		Practiced (N=451)		Practiced among advised	
	No.	%	No.	%	No.	%
Get Meningitis vaccination *	416	92.2	403	89.4	396	95.2
Get Influenza vaccination *	41	9.1	3	0.7	3	7.3
Do not buy food from street ven-	238	52.8	401	88.9	218	91.6
Wash vegetables before eating *	360	79.8	391	86.7	341	94.7
Wash hands before eating *	358	79.4	401	88.9	344	96.1
Use transportation means	266	59.0	424	94.0	258	97.0
Use umbrellas *	217	48.1	122	27.1	104	47.9
Consume plenty amount of fluids	313	69.4	345	76.5	290	92.7
Wear identification wristbands *	90	20.0	4	0.9	4	4.4
Do not use used razor blades	241	53.4	434	96.2	231	95.9
Do not lend used razor blades	205	45.5	440	97.6	202	98.5
Do not smoke during Hajj	214	47.5	421	93.3	199	93
Use facemasks *	224	49.7	159	35.3	144	64.3

\* p < 0.05 (for relationship between advice and practice)

# Effect of Health Education Advice on Saudi Hajjis, cont ...

(Continued from page 11)

using umbrellas and facemasks. Interestingly, many more hajjis claimed to observe healthy practices than those claiming to have received the advice for most of the issues studied.

Some of the practices like using umbrellas or using transportation might have been effected by the peer practices during hajj, instead of individual level of being exposed to health messages. Despite all that, receiving health message is generally found to be positively associated with the practices observed.

Still, certain lacunae can be identified in the health education messages apparently well disseminated and acted upon. Meningococcal disease (MCD) is a serious disease, which has a case-fatality rate of about 15% among Hajjis.<sup>3</sup> In recent years a number of outbreaks have been reported, in Makkah or across the world, associated with Hajj.<sup>4</sup> To prevent recurrence of such outbreaks, in addition to other preventive measures, high meningococcal vaccine (MCV) coverage rates have to be maintained. In confirmation to earlier studies,<sup>5,6</sup> this study showed that MCV coverage among Saudi hajjis was about 89.4%. Keeping in view the immunogenicity pattern of meningitis vaccine, all hajjis should have been vaccinated at least 10 days before arrival to Makkah for hajj.<sup>7</sup> In this respect, the effective

vaccination coverage is very low because almost half the Hajjis (49.6%) had been vaccinated under 10 days before their arrival to Makkah, a finding consistent with an earlier study, indicating poor awareness of hajjis regarding proper timing for vaccination due to absence of this component in the health education messages.<sup>5</sup>

The mass media, represented by TV, was the most frequently utilized source of advice for all health education advices except for that of vaccination, using facemasks, and smoking. Interestingly, it was not among the most effective sources of advice, which may be explained by the fact that mass media is not as effective as might be expected in case of behavioral changes. In fact, one of the most confident assertions emerging from communication of innovations theory is that interpersonal channels of communication are more effective than mass media when it comes to persuading communities to change their practices.<sup>8,9</sup> The present study showed that lectures and physicians as resource of health advice among Hajjis are highly effective, despite the fact that they were not among the most frequent sources of advice.

## References

1- Ministry of Health. Health services for pilgrims to Makkah 1985-2000. Riyadh: Ministry of Health.

2000: 315-330.

2- Chin J (editor). Control of Communicable Disease Manual. 17<sup>th</sup> ed. Washington DC: American Public Health Association. 2000: 340-345

3- Al-Gahtani YM, El Bushra HE, et al. Epidemiological investigation of an outbreak of meningococcal meningitis in Makkah, Saudi Arabia, 1992. *Epidemiol Infect* 1995;115:399-409

4- Agullera JF, et al: Outbreak of Serogroup W135 meningococcal disease after the Hajj pilgrim Europe, 2000. *Emerg Inf Dis* 2002; 8 (8).

5- Al-Rabeah AM, El-Bushra HE, Al-Sayed MO, Al-Saigul AM, Al-Rasheedi AA, Al-Mazam, et al. Behavioral risk factors for diseases during hajj to Makkah, 1998. *Saudi Epidemiol Bull* 1998; 5(3,4): 19,20

6- Al-Maghderi YS, Aljoudi AS, Choudhry AJ. Behavioral risk factors for diseases during Hajj to Makkah, 2002. *Saudi Epidemiol Bull* 2002; 9(3): 19,20

7- Lepow ML. Meningococcal vaccine. In: Plotkin SA, Zorab R, eds. *Vaccines*. 3<sup>rd</sup> ed. Philadelphia: W B Saunders. 1999: 503-515

8- Tones BK, Tilford S. Health education: effectiveness, efficiency and equity. London: Chapman and Hall. 1994: 113

9- Backer TE, Rogers EM, So pony

**Table 2: Source of advice for hajjis who had received health education**

Advice	N	Radio %	TV %	Newspapers %	MOH %	Friends %	Lectures %	Internet %	Doctors %
Get Meningitis vaccine	416	9.9	32.2	13.5	20.9	23.3	7.5	5.5	34.1
Get Influenza vaccine	41	4.9	19.5	9.8	17.1	26.8	12.2	2.4	29.3
Do not buy food from street vendors	238	10.1	40.3	19.3	19.7	36.6	7.6	3.8	13.9
Wash vegetable before eating	360	22.8	56.4	25.0	33.1	26.4	18.3	12.5	28.9
Use transportation means	266	9.4	39.5	14.7	8.6	43.2	5.6	3.0	4.5
Use umbrellas	217	11.5	51.6	13.8	16.1	19.8	4.6	3.7	12.4
Consume plenty amount of fluids	313	11.5	42.5	14.4	17.3	25.9	6.1	5.4	25.6
Wear identification wristbands	90	10.0	51.1	11.1	32.2	23.3	7.8	1.1	3.3
Do not use used razor blades	241	12.0	48.1	16.2	28.6	29.5	7.5	4.6	15.4
Do not lend used razor blades	205	12.7	44.4	15.1	34.6	26.8	6.8	3.4	13.7
Do not smoke during Hajj	214	19.2	48.6	24.8	40.8	23.4	21.0	6.5	19.2
Use facemasks	224	8.5	37.5	15.6	82.6	33.9	2.7	3.1	18.3
Wash hands before eating	358	25.7	58.1	25.7	34.6	27.4	24.0	13.7	38.3

# Premarital testing Screening in KSA

The inherited haemoglobinopathies, a group of disorders that include thalassaemias and sickle-cell disease, are a major public health problem in the Mediterranean region, the Middle East, Indian subcontinent, Asia, tropical Africa and the Caribbean. However, because of population flow, they are now widespread and occur in Europe and North and South America. According to the World Health Organization (WHO), approximate estimates of affected individuals indicate that 240 million people are heterozygous for these disorders and at least 200,000 lethally affected homozygotes are born annually, approximately equally divided between sickle-cell anemia and thalassaemia.<sup>1</sup> As consanguineous marriage is common in most Arabic-speaking countries, the incidence of such diseases is high, such that 5%-10% of Arabs carry the thalassaemia gene.<sup>2,3</sup>

The WHO has recommended several measures for the prevention of genetic diseases, such as health education, screening to identify individuals or couples at risk, genetic counseling and prenatal diagnosis. For these aspects of prevention to be applied to a population, various ethical, legal, and cultural issues have to be taken into account. Any preventive campaign must therefore be tailored to the needs of each culture.<sup>1</sup>

Genetic counseling is a new field of medicine demanding a comprehensive knowledge of genetics and the management of genetic disease, as well as its impact on the individual, the family, offspring and the community at large. It is the process of an individual or a family obtaining information and advice about a genetic condition that may affect the individual, the individual's progeny, other relatives or the family as a whole, which they can then use to take appropriate, informed decisions about marriage, reproduction, abortion and health management. Genetic counselors should seek to provide facts on genetic information for their clients, putting clients' social habits and religion in consideration before giving advice and without imposing their own views.

As alternatives to marriage prohibition, couples whose tests do prove positive for genetic diseases, could be

counseled to choose a number of alternatives, should they still wish to marry. Such alternatives might include avoidance of pregnancy by contraception or sterilization; adoption; donation of a sperm, ovum or pre-embryo, or motherhood surrogacy; preimplantation diagnosis; diagnosis during pregnancy, for example, chorionic villus sampling (CVS), and amniocentesis, blood testing of both the expectant mother and fetus, and ultrasonography.<sup>4</sup>

A successful example of genetic counseling is the Thalassaemia Control Program implemented in Cyprus, which has succeeded in reducing the incidence of b-thalassaemia major in the country through measures such as health education, carrier screening, premarital counseling and prenatal diagnosis. This success has encouraged other countries to adopt the practice of premarital counseling. Countries or communities practicing such counseling, either voluntarily or by law, are Italy and Greece for thalassaemia, the Ashkanazi Jews for Tay-Sachs disease and some European communities for cystic fibrosis.<sup>4</sup>

Because of the demographic factors and population structure in Middle Eastern countries, e.g. advanced paternal and maternal ages and the high frequency of consanguineous marriages, there is a considerable need for genetic services in order to avoid misinformation and mismanagement of consanguinity on genetic grounds. Premarital counseling is one of the important measures that can help reduce the incidence of genetic diseases in such circumstances.<sup>2,3</sup>

In Saudi Arabia, extensive investigations conducted over several years in different provinces have revealed the wide distribution of the Hb S, a- and b-thalassaemia genes. Studies have shown the high rate of occurrence of these genes in the eastern and western provinces, particularly in the south-west. These areas have a history of malaria endemicity, and despite the fact that malaria has more or less been eliminated; the frequency of the gene's occurrence has remained high.<sup>5</sup>

Legislation of the Saudi premarital screening program began by a decision of the Saudi cabinet to start the premarital screening program on 21/2/2004 H for all Saudi couples

willing to get married. It consists of a compulsory blood analysis for all Saudi individuals willing to marry in order to detect individuals affected by, or are carriers of certain hereditary diseases and to provide them with the appropriate genetic counseling. The screening result is mandatory to complete the marriage license. However, the couple have the choice to proceed for marriage regardless of the result.<sup>6</sup>

The main objectives of this screening program are to decrease the incidence of the common hereditary blood diseases among the Saudi population, to reduce the financial burden and workload due to treatment of the affected patients, and to avoid the social and psychological problems from having children with hereditary blood diseases in families.

As a start, the Saudi premarital screening program includes sickle cell anemia and thalassaemia only, which are the most common hereditary blood diseases in Saudi Arabia. In future, other hereditary blood diseases and some sexually transmitted diseases will be added.<sup>6</sup>

– Reported by: Dr. Fahad Alswaidi  
(Department of Non-Communicable Diseases, MOH.)

## References:

1. Hereditary anemia: genetic basis, clinical features, diagnosis and treatment. Bull Wld Hlth Org 1982, 60(5):643-60.
2. Al-Arrayed S. The nature of sickle-cell disease in Bahrain. J B Med Soc 1994, 6(3):125-30.
3. Al-Arrayed S. The frequency of consanguineous marriages in the state of Bahrain. B Med bull 1995, 17(2):63-6.
4. Emery AEH, Rimoin DL, eds. Principles and practice of medical genetics, Vol.2. Edinburgh, Churchill Livingstone, 1990:252-8.
5. El-Hazmi MAF, Warsy AS. Appraisal of sickle-cell and thalassaemia genes in Saudi Arabia. Eastern Med Hlth J 1999; 5 (6): 1147-1153.
7. Non-communicable diseases general directorate, MOH, Saudi Arabia. Premarital screening program guidelines. 2004.

## ملخص باللغة العربية

أخذوا التحصين قبل الوصول الى المطاعم بأقل من عشرة أيام.

من ٥٢,٨% نصحوا بعدم شراء الطعام من الباعة المتجولين ٩١,٦% أخذوا بالصحبة. من ٧٩,٨% نصحوا بغسل الخضروات قبل أكلها ٧٩,٧% نصحوا بغسل قبل الأكل ٩١,١% فعلوا ذلك. من ٥٩% نصحوا باستخدام وسائل الاتصال للتقليل بين المشاعر ٩٧% فعلوا ذلك. من ٢٠% نصحوا باستخدام سوار المعصم التريفي ٤,٤% فعلوا ذلك. من ١٩,٩% نصحوا بشرب أكثر من ليترين من السوائل يوميا ٩,٧% فعلوا ذلك. من جميع الحججات ٥٣,٤% نصحوا بعدم استعمال شفرات الحلاقة المستعملة و ٩٥,٩% لم يستعملوها. من ٤٥,٥% نصحوا بعدم إعارة الشفرات المستعملة ٩٨,٥% استجابوا للصحبة. من ٤٧,٥% نصحوا بعدم التخزين في المشاعر ٩٣% استجابوا. ومن ٤٩,٧% نصحوا باستخدام كممام الألف ٣,٤% استعملوه.

كان التلفزيون المصدر الرئيسي للرسائل التثقيفية، كما أظهرت الدراسة أن المحاضرات و الأطباء أكثر تأثيرا من باقي مصادر التثقيف الصحي الأخرى بالرغم من أنها لم يكونا من المصادر الأكثر استعمالا.

تم التوصية على تفعيل برامج التثقيف الصحي حول الأخطار الصحية التي تواجهه الحجاج والمتمولين عند أدائهم للمناسك بعدما يركز الرعاية الصحية الأولية، والتسيق مع الجهات المختلفة لمقدورات مكتبة في المدارس والجامعات والوالت الحكومية حول المشاكل الصحية التي تواجه الحجاج وكيفية تجنبها. يجب تطبيق القوانين بشكل أكثر صرامة وحزم بما يخص التطعيم ضد التهاب السحايا مع التأكيد على أن يكون التطعيم قبل القوم إلى مكة بفترة أيام على الأقل.

إعداد: د. عبد الله سرور الجودي، د. رائد محمد نوح، د. عبد الجليل شؤري (برنامج الوبائيات الحقلية).

عن طريق الوجدات الغذائية التي يتناولونها (١٠,٤%).

عدم الاستجابة للتوجيهات استخدام الحديد المدعم كان عامل خطورة للإصابة بالأنيميا كما كان متوقعا (Adjusted RR 5.4, 95%CI 2.37-12.4)، كما كان التعليم هو العامل الوحيد الذي ارتبط بالاستجابة ( $P < 0.01$ ). تم التوصية على توعية النساء الحوامل بالأعراض الجانبية المحتملة لقرص الحديد المدعم أثناء الحمل و تزويدهم بوسائل تعليمية لتذكيرهم قد تحسن من استجابتهم. تناول أقراص الحديد أثناء تناول الطعام قد يكون طريقة فعالة لزيادة المطاوعة عن طريق إقاص الأعراض الجانبية.

إعداد: د. منى المنزي، د. ابتهاج زين العالين، د. رائد محمد نوح (برنامج الوبائيات الحقلية).

### استجابة الحجاج للتصائح الصحية أثناء موسم حج ١٤٢٣ هـ.

يتعرض الحجاج لمخاطر صحية عديدة عند أدائهم لمناسك الحج و قد قامت وزارة الصحة من خلال برنامج التثقيف الصحي بشر الوعي بتلك المخاطر بين الحجاج ولا سيما الناطقين بالعربية و تلك اللوالية من الأمراض وتأمين الرضع الصحي. يركز البرنامج على عدد من القضايا الرئيسية باستعمال طرق متنوعة في إيصال المعلومة. وبالرغم من أن البرنامج موجه إلى جميع الحجاج إلا أن الحجاج السعوديين يكونون مجموعة مستهدفة هامة لأكثر رسائل التثقيف الصحي العربية و المقروعة و المسموعة باللغة العربية. تم إجراء هذه الدراسة بهدف معرفة تأثير برنامج التثقيف الصحي على تفاهة و سلوكيات الحجاج السعوديين لعام ١٤٢٣ هـ و توفير توصيات علمية للتخطيط للبرامج المستقبلية.

كانت الدراسة عبارة عن مسح مقطعي باستخدام استبيان يبلد الحجاج. تم جمع المعلومات في منى حيث يسفر الحجاج للأداء أيام على الأقل في منى حيث يسفر الحجاج للأداء شهر ذي الحجة. اختيرت عينة عشوائية على ثلاثة مراحل باستخدام خريطة متناقلة منى حيث حددت مخيمات الحجاج السعدويين واختير منها ١٠ مخيمات. قسم كل مخيم إلى ٩ مربعات متساوية المساحة تقريبا، اختارنا منها مربعات عشوائية باستخدام جدول الأرقام العشوائية) و اختارنا خيمة واحدة عشوائية من كل مربع.

من ٤٥١ حاجا في عينة الدراسة، كان ٦٩,٤% من الذكور، و ٥٢,٥% يحجون لأول مرة، ٩٦,٥% كانوا يحجون مع حملة. من جملة الحجاج ٩٢,٢% نصحوا بأخذ التحصين ضد التهاب السحايا، تحصن منهم ٩٥,١% من كل الحجاج ٤٩,٦%

الإستجابة لتناول أقراص الحديد المدعمة بين الحوامل المراجعات لعيادة متابعة الحمل بمستشفى اليمامة بالرياض

قرر النم الناتج عن نقص الحديد هو أكثر الأمراض الغذائية شيوعا في العالم، والنساء الحوامل خاصة من أكثر الفئات المهتدة بالإصابة نتيجة للزيادة العالية في احتياجاتهم من الحديد أثناء الحمل. وقد وضعت منظمة الصحة العالمية توجيهات للسيطرة على هذه المشكلة تشمل استخدام أقراص الحديد المدعمة ولمدة ستة أشهر خلال الحمل وحدث الجرعة بحسب معدلات الإصابة. وقد أثبتت الدراسات السابقة أن عدم الاستجابة في استخدام الحديد هو أهم عائق لنجاح تلك التوجهات، لكن المعلومات التي توضح العوامل المرتبطة بعدم الاستجابة في استخدام الحديد المدعم أثناء الحمل ما زالت قليلة.

لراسة معدلات الاستجابة بين النساء الحوامل في استخدام الحديد والتعرف على العوامل المؤثرة على الاستجابة في استخدامه قررنا عمل دراسة على النساء الحوامل المراجعات لعيادة متابعة الحمل بمستشفى اليمامة بالرياض ممن هم في الأسبوع ٣٦ أو بعده، اللاتي تم تسجيلهن في عيادة متابعة الحمل قبل الأسبوع ١٣ من الحمل و طبقت عليهم شروط الدخول في الدراسة والتي تشمل عدم الإصابة بأمراض الدم الوراثية أو الحمل بتوأم أو الإصابة بيزيف أثناء هذا الحمل، من خلال عينة تم تقديرها باستخدام برنامج Epi-Info مجموعها ٣٠٨.

هدف الدراسة الى التعرف على معدلات الأنيميا في العينة، و مقدار الاستجابة لتوجيهات استخدام الحديد المدعم و تقييم العوامل المؤثرة على الاستجابة، مع تقييم تأثير عدم الاستجابة على مستوى الهيموجلوبين بالدم.

كان مستوى الهيموجلوبين بين النساء في العينة عند قياسه أول مرة (قبل الأسبوع ١٣) يسجل ١٤,٢ - ٨,٢ جم / دسل {معدل 11.7، IQR 10.8-1٢.٥} والإصابة بالأنيميا قبل الأسبوع الثالث عشر من الحمل كان ٢١,٦%. أما مستوى الهيموجلوبين في الأسبوع ٣٦ أو بعده فكان يتراوح بين ٧,٩ - ١٤,٢ جم / دسل {معدل 11.5، IQR 10.5-12.4} ونسبة الإصابة بالأنيميا في الأسبوع ٣٦ أو بعده ٣٣,٩%.

كان مجموع النساء التي تناولن الحديد المدعم بانتظام يوميا لمدة لا تقل عن أربعة أشهر خلال الحمل ١٥٣ (٤٩%)، بينما ١١٨ (٣٨%) تناولوه بشكل غير منتظم (ليس يوميا أو يوميا لمدة تقل عن أربعة أشهر)، و ٣٧ (١٢%) لم يتناولوه على الإطلاق خلال حملهن أو استخدمنه بشكل غير منتظم لأقل من شهر.

كان أهم أسباب عدم الاستجابة في استخدام الحديد المدعم هي الأعراض الجانبية المصاحبة لتناوله (٤٠,٢%) يليها تسيل تناوله (٣٢,٥%)، ثم الاعتقاد بأنهن يأخذن ما يكفي من الحديد

# Compliance to Iron Supplementation guidelines during pregnancy, cont ....

(Continued from page 10)

creased with advanced maternal age ( $\geq 35$ ) and parity ( $>6$ ). The percentage of strict compliance was higher among educated women and those who were doing some form of physical exercise. In multivariate analysis only education was found to have a significant effect. These findings are comparable to those reported by Gofin, who found that non-compliance was higher with increasing maternal age and parity. Good compliance was higher among educated women.<sup>5</sup>

In this study the main stated causes of non-compliance were side effects 40.3% and forgetfulness 32.5%. In a study investigating the determinants of compliance with iron supplementation in South East Asian countries, only 3% of Burmese women stated side effects as the reason for stopping iron supplements, while 30% of Thai women complained of side effects.<sup>3</sup>

The importance of compliance to iron supplementation during pregnancy should be enforced to pregnant women by health education to improve their awareness, and explaining the possible side effects of iron deficiency anemia during pregnancy. Pregnant women should be provided with educational and reminder aids that may improve compliance. Intermittent dosing has shown to be a realistic alternative to daily supplementation and produces fewer side effects. Improving the quality of the patient-provider relationship is pivotal in improving compliance to iron supplements and other medical treatments.

## References:

- 1- WHO. Iron deficiency anemia: assessment, prevention and control. A guide for program managers. (Document WHO/NHD/01.3.), 2001.
- 2-World Health Organization. WHO Bulletin. Vol 69 1991; 130.
- 3-Galloway R, McGuire J. Determinants of compliance with iron supplementation: supplies, side effects, or psychology? Soc Sci Med. 1994; 39(3): 381-90.
- 4-Nordeng H, Eskild A, Nesheim

Bl. Aursnes I, Jacobsen G. Guidelines for iron supplementation in pregnancy: compliance among 431 parous Scandinavian women. J Clin Pharmacol 2003; 59: 163-168.

5-Gofin R, Adler B, Palti H. Effectiveness of iron supplementation compared to iron treatment during pregnancy. Public Health. 1989; 103: 139-145.

## Mark your calendar . . .

### Inside the Kingdom

**Mar 16-17, 2004: Workshop: Neonatal Screening Program: Now & Future**  
Contact: King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. Tel: 011-96-61-442-7238, Fax: 011-96-61-442-4153, Email: web\_symposia@kfshrc.edu.sa, Website: www.kfshrc.edu.sa/symposia

**Apr 07-08, 2004: Workshop: Evidence - Based Medical Practice**  
Contact: King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. Tel: 011-96-61-442-7238, Fax: 011-96-61-442-4153, Email: web\_symposia@kfshrc.edu.sa, Website: www.kfshrc.edu.sa/symposia

**Apr 27-28, 2004: Recent Advances In Reproductive Medicine**  
Contact: King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. Tel: 011-96-61-442-7238, Fax: 011-96-61-442-4153, Email: web\_symposia@kfshrc.edu.sa, Website: www.kfshrc.edu.sa/symposia

### Outside the Kingdom

**March 5, 2004: CONFERENCE IN EPIDEMIOLOGY: Social Determinants of Health and Disease**

Location: Embassy Suites Napa Valley, Napa, California,  
Contact: Laurie Richardson, University of California, Davis, Graduate Group in Epidemiology, Room 1107 Vet Med Surge I, One Shields Ave., Davis, CA 95616, USA. Tel.: (1) (530) 752-8340.  
e-mail: [lrichardson@ucdavis.edu](mailto:lrichardson@ucdavis.edu)

**Saudi Epidemiology Bulletin** (SEB) is published quarterly by the Department of Preventive Medicine and the Field Epidemiology Training Program (FETP) of the Ministry of Health.

The *Saudi Epidemiology Bulletin* welcomes reports from the regions. Please send your reports to the address shown. Thank you.

Send correspondence, comments, calendar listings, or articles to:

**Saudi Epidemiology Bulletin**  
Editor-in-Chief  
P.O. Box 6344

Riyadh 11442, Saudi Arabia  
For epidemiological assistance, call or fax the FETP at 01-496-0163  
e-mail: [fetp@naseej.com.sa](mailto:fetp@naseej.com.sa)

## Department of Preventive Medicine:

Dr. Yagoub Al-Mazroa  
Assistant Deputy Minister for Preventive Medicine, and SEB Supervisor

Dr. Mohammed Al-Jefri  
General Director, Parasitic and Infectious Diseases Department

Dr. Amin Mishkhas  
Director, Infectious Diseases Department

## Field Epidemiology Training Program:

Dr. Nasser Al-Hamdan, FETP Supervisor, SEB Editor-in-Chief

Dr. Randa Nooh  
Consultant Epidemiologist  
Bulletin Editor

Dr. Abdul Jamil Choudhry  
Consultant Epidemiologist,  
Bulletin Editor.

## Selected notifiable diseases by region, Apr - Jun 2004

	Riyadh	Makkah	Jeddah	Taif	Madinah	Qassim	Eastern	Hasa	Hafr Al-Batin	Asir	Bisha	Tabuk	Hail	Al-Shamal	Jizan	Najran	Baha	Al-Jouf	Gorlat	Gonfuda	Total
Measles	131	37	133	17	0	11	0	0	0	246	6	1	0	1	156	118	4	0	0	0	864
Mumps	5	4	32	0	0	2	6	7	2	4	0	1	0	0	1	1	1	0	0	0	66
Rubella	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Varicella	3630	1259	3382	733	1761	2110	2227	4587	1197	2464	929	1333	304	527	383	375	680	201	78	135	28295
Brucellosis	119	8	6	75	28	317	46	11	110	393	77	35	181	38	45	23	27	6	0	15	1560
Meningitis mening.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
Meningitis other	33	4	19	10	8	8	1	8	2	2	0	8	3	0	0	0	0	0	0	0	106
Hepatitis A	71	60	24	4	42	79	14	24	154	135	34	50	69	8	32	59	14	2	24	15	914
Hepatitis B	241	15	251	16	77	84	133	11	1	68	13	85	7	8	17	8	52	0	1	37	1125
Hepatitis C	162	7	243	3	30	43	108	15	0	14	11	34	1	2	4	0	31	0	0	18	726
Hepatitis unspecified	30	0	11	0	1	0	2	6	0	29	0	38	7	0	163	0	0	0	1	2	290
Typhoid & paratyphoid	6	6	0	0	10	3	15	4	0	18	9	3	4	2	10	1	9	0	0	0	100
Amoebic dysentery	34	1	425	24	9	6	21	13	12	79	20	0	20	0	25	9	6	0	1	0	705
Shigellosis	21	1	5	0	4	8	5	3	3	0	0	6	0	1	1	9	2	0	0	0	69
Salmonellosis	162	2	26	7	3	10	119	32	13	11	6	16	0	0	1	14	14	0	1	1	438
Syphilis	0	0	21	0	0	0	22	6	0	2	2	0	0	0	1	0	7	0	4	1	66
VD, other	7	0	26	0	0	0	22	23	0	1	2	0	0	0	17	0	0	0	1	0	99

## Comparisons of selected notifiable diseases, Apr - Jun 2003-2004

DISEASE	Apr-Jun		Change %	Jan-Jun		DISEASE	Apr-Jun		Change %	Jan-Jun	
	2003	2004		2004	2003		2003	2004		2004	2003
Diphtheria	0	0	0	0	2	Meningitis other	135	106	-21	273	494
Pertussis	32	19	-41	27	120	Hepatitis A	690	914	32	1624	2104
Tetanus, neonat	6	8	33	25	31	Hepatitis B	1189	1125	-5	2304	4329
Tetanus, other	0	2	100	5	12	Hepatitis C	773	726	-6	1483	2812
Poliomyelitis	0	0	0	0	0	Hepatitis unspecified	343	290	-15	620	1101
Measles	752	864	15	1393	1208	Typhoid & paratyphoid	109	100	-8	205	403
Mumps	222	66	-70	264	749	Amoebic dysentery	585	705	21	1333	2328
Rubella	9	6	-33	11	22	Shigellosis	111	69	-38	192	490
Varicella	28660	28295	-1	47481	70884	Salmonellosis	554	438	-21	796	2219
Brucellosis	1639	1560	-5	2817	4534	Syphilis	44	66	50	143	166
Meningitis mening.	17	2	-88	5	44	VD, other	93	99	6	177	382

## Diseases of low frequency, Apr - Jun 2004

Yellow fever, Plaque , Poliomyelitis, Rabies, Haemolytic Uraemic Syndrome, Puerperal Sepsis, Diphtheria: No Cases

Pertussis: 19 cases ( Hassa 9, Hail 4, Riyadh 3, Makkah 1, Eastern 1 )

Neonatal Tetanus: 8 cases ( Makkah 6 , Jeddah 2 )

Ecchinococcosis: 2 cases ( Riyadh )

Guillain Barre Syndrome: 25 cases ( Riyadh 7, Qassim 3, Jeddah 2, Taif 2, Al-Shamal 2, Jazan 2, Hafr Al-Batin 1, Najran 2, Bisha 1, Hail 1, Jouf 1, Qunfuda 1 )