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# النشرة الوبائية السعودية

تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي و برنامج الوبائيات الحقلي

المجلد الثامن – العدد الثالث – يوليه – سبتمبر ٢٠٠١

# Low Birth Weight and Infant Mortality in a Major Hospital in Riyadh, January - June 1999.

This study was conducted to investigate the birth weight pattern and maturity of infants weighing <2500 gms among neonates born during a six month period (January-June 1999), to estimate the prevalence of low birth weight, and to report the documented causes of deaths among the neonates during this time period. The study was conducted at Al-Yamamah Hospital, in Riyadh, after obtaining official approval. A random number of infants and mothers medical files were reviewed for the existence of information and data items needed. Maternal variables were obtained from medical files of mothers who delivered LBW infants within the study period.

A pilot study was conducted to test the applicability of the designed data collection form and the presence of the required information in the records. Low birth weight was defined to include all deliveries below 2500 gm. Perinatal mortality included all infants between 28 weeks of gestation to time of birth, while neonatal mortality included those who died within the first 28 days (4 weeks) of life. For descriptive purposes, birth weight was divided into three categories: Extremely Low Birth Weight (ELBW ≤ 1000 gm), Very Low Birth Weight (VLBW 1001-1500 gm) and Low Birth Weight (LBW 1501-2499 gm).

A total of 8749 infants were delivered between January and June, 1999, of which 504 (5.8%) were below normal weight. Infants with LBW constituted 356 (70.6%), 67 (13.3%) were of VLBW and 81 (16.1%) were ELBW. Male and female infants were close to equal in numbers.

We found a mortality rate for all infants below normal weight of 1 infant per hundred. Among all 504 infants below normal weight, 423 (84%) were alive and 81 (16.1%) were dead. The birth weight stratification of living infants showed

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# Low Birth Weight and Infant Mortality in a Major Hospital in Riyadh, cont ....

that 334 (79%) were of LBW, 56 (13.2%) were VLBW, and 33 (7.8%) were ELBW at birth. Among the dead infants 22 (27.2%) were LBW, 11 (13.6%) were VLBW, and 48 (59.3%) were ELBW. There was no statistically significant difference between sex among dead LBW infants.

Out of 423 live infants, 136 (32.2%) were not referred to NICU. Most infants referred to NICU were of LBW (70.7%). Among those admitted to NICU, 211 (73.5%) lived and 76 (26.5%) died. The overall mortality rate among the LBW infants was 157 (31.2%) irrespective of birth weight subgrouping. Stratification of living infants by birth weight showed that 176 (83.5%) were LBW, 33 (15.6%) were VLBW and 2 (0.9%) were ELBW. Among dead infants 27 (35.5%) were of LBW, 18 (23.7%) were VLBW and 31 (40.8%) were ELBW. The commonest recorded causes of deaths were birth asphyxia, hyaline membrane disease, preterm birth and congenital abnormalities (Table 1).

The gestational age of LBW infants showed that 290 (57.5%) reached 35 weeks or more at the time of delivery, 179 (35.5%) were born between 24-34 weeks and 35 (7.0%) were born before 24 weeks of pregnancy.

Regarding mode of delivery 413 (81.9%) were born by normal vaginal delivery and 91 (18.1%) by caesarian section. An attempt was done to find out the time interval between admission of infants to NICU and the outcome (dead or alive), but this could not be achieved.

*– Reported by: Dr. Ali S. Al Rumikan (Field Epidemiology Training Program), Dr. Awatif A. Alam (Department of Family and Community Medicine, King Saud University).*

**Editorial note:** The reduction of infant mortality is a major goal of the Saudi government's health plans and is considered as part of the future strategy for health. In most developing countries, approximately half of infant deaths occur during the first month of life.[1]

Low birth weight is of public health importance because of the strong relationship between birth weight and infant mortality and morbidity. Studies using linked birth/infant death files have reported that infants weighing <2,500 gm at birth are at a considerably increased risk of neonatal mortality, which was found to be 40 times more likely among LBW infants and 200 times greater among very low birth weight infants (VLBW, those weighing < 1,500g at birth) than it is among infants of normal birth weight.[2]

The best available global estimate of the prevalence of LBW was produced by the World Health Organization in the 1980s, and the highest reported rates were from Asia, ranging between 30-40% in the Indian subcontinent, to 5-6% in China and Japan.[3] In West Africa, the LBW rates were 10%-20%, whereas in North Africa the rates were 5%-15%. The ranges of LBW rates were 10%-18% in Central America and 9%-12% in South America. However the lowest LBW rates were reported for North America and Europe, with rates in the range of 4%-8%. In developing countries, most LBW is related to intrauterine growth retardation, whereas in developed countries most LBW is related to preterm delivery and its consequences.[4]

LBW infants are more susceptible to a wide range of conditions such as neurological problems, cerebral palsy and seizure disorders, severe mental retardation, lower respiratory tract infections, hearing disorders, behavioral problems, and complications of neonatal intensive care interventions, and general morbidity.[2]

It is known that the causality of low birth weight is associated with many factors, and it has been established that the birth weight is not only a critical determinant of survival, growth and development, but also a valuable indicator of maternal health. The incidence of premature deliveries is an indication of the general health and reproductive efficiency of a population. Moreover, the rates of survival of LBW infants reflect the standard and efficiency of perinatal care services.[5]

Low birth weight and its close association with neonatal and post neonatal mortality, as well as infant and child morbidity, makes it a focus of attention for public health interventions. The magnitude of the problem of low birth weight, as reflected by its incidence, constitutes a priority of attention from health authorities. The incidence of LBW infants range from 4% in Scandinavia and 2% in England to 17.7% in rural south Africa.[5]

In this study infants below the normal weight constituted 5.8% of all deliveries and the mortality rate was 1%. Major causes of prenatal deaths reported in this study are similar to causes reported in another hospital in the Kingdom of Saudi Arabia.[6]

The best defense against infant mortality and LBW is early and continuous prenatal care, which is particularly effective among high-risk medical and socio-economic groups.

*(Continued on page 23)*

Table 1. Causes of Death among LBW infants

| Condition | Males | | Females | | Total | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Birth Asphyxia | 9 | 11.7 | 10 | 12.9 | 19 | 24.6 |
| Hyaline Membrane Disease | 10 | 12.9 | 5 | 6.5 | 15 | 19.4 |
| Preterm Birth | 9 | 11.7 | 5 | 6.5 | 14 | 18.2 |
| Congenital Abnormalities | 6 | 7.8 | 6 | 7.8 | 12 | 15.6 |
| Intravenous Haemorrhage | 2 | 1.7 | 5 | 6.5 | 7 | 9.2 |
| Sepsis | 4 | 5.1 | 3 | 3.9 | 7 | 9.0 |
| Necrotizing Enterocolitis | 1 | 1.3 | 2 | 2.7 | 3 | 4.0 |
| Total | 41 | 53.2 | 36 | 46.8 | 77 | 100.0 |

# Three Cases of Blood Transfusion Malaria in Riyadh City, 2000.

This report is of the development of malaria in three Saudi neonates after receiving blood products during their admission into a nursery of a major hospital in Riyadh, which is a city known to be free of malaria. We conducted an epidemiological investigation to identify the type of nosocomial malaria, its cause, and to suggest a practical approach to prevent similar incidents in the future.

The medical files of all three cases were reviewed, along with the records of all blood or blood products administered. Medical interventions done while the cases were in hospital were reviewed, including heparin preparation and administration, and intravenous device procedures. All donors of the blood units used were interviewed and questioned about recent travel to malarious areas. Mothers of the infants were questioned about travel to malarious areas, symptoms and signs of malaria, and antenatal history. Screening procedures at the blood bank, and other reports of transfusion malaria from the same city were also reviewed.

The first case was a 2-month old, preterm Saudi female, born at 35 weeks, with a birth weight of 1.7 Kg. She remained in hospital for 23 days and was discharged with a weight of 2.0 Kg. After that, she was admitted to another hospital complaining of cough, fever and shortness of breath, where she stayed for 10 days and received IV medication and one Unit of packed red blood cells (PRBC), and was discharged one week later in good general health. Two weeks after that, she developed fever and was brought again to hospital where a blood film for malaria turned out positive for Plasmodium vivax. Inquiry on the blood donor revealed that he came from a malarious area, but had not traveled in the previous 6 months.

The second case was a full term baby, admitted at 19 days of age due to pallor and poor feeding. Investigations showed the infant to have congenital heart disease, specific IGM antibody for cytomegalovirus, and pancytopenia. She received repeated blood transfusions, a total of 38 units (6 of PRBCs, 24 of fresh frozen plasma FFP, and 8 of platelet concentrate). The patient was discharged from hospital in good general condition but was readmitted again due to fever and poor feeding of one-week duration. The blood film showed heavy parasitemia for Plasmodium falciparum. Inquiry on the blood donors revealed that 4 of the 38 came from malarious areas, and all had history of travel to their home areas within 6 months prior to blood donation.

The third case was a newborn preterm Saudi boy, admitted to NICU directly from the labor room complaining of anemia and shortness of breath. He received 64 transfusions (25 of FFP, 15 of PRBCs and 24 of platelet concentrate). Three weeks later, he developed a spike of fever. Blood smear showed heavy parasitemia for Plasmodium falciparum. Inquiry on the blood donors revealed that three of the 64 came from malarious areas in their countries and all had traveled to their home areas within 6 months prior to blood donation.

All three cases had not traveled to malarious areas and had no family history of malaria. Mothers' blood smears were negative, and all IV procedures were done according to infection control practices. All three cases had developed fever a few weeks after receiving blood products from donors who came from or had recent history of travel to malarious areas. The possibilities of congenital malaria and malpractice were excluded, and the most appropriate diagnosis was transfusion malaria.

*– Reported by: Dr. Ahmed Al Sehli, Dr. Adel Fatani, Dr. AbdulAziz Al Mazam, Dr. Adel Turkistani (Field Epidemiology Training Program), Mrs. Shadia Al Sudani, Mrs. Hind Zoman (Riyadh Medical Complex).*

**Editorial note:** Blood transfusion malaria is a significant problem in endemic countries, where the number of incidents depends on the selection of donor and the type of screening test applied.[1]

The standard test for identification of Plasmodium.spp is microscopical examination in Giemsa stained thick and thin blood films, which is a rapid and inexpensive diagnostic test. The major disadvantage of the thick smear is that it is often difficult to read and interpretation of the results requires considerable expertise, particularly at low levels of parasitemia. Furthermore, among donors with Plasmodium falciparum malaria the parasites can be sequestered and are not always present in peripheral blood, and diagnosis may be easily missed. Because of these limitations, serological donor screening should be done using a highly sensitive test to minimize the risk of transfusion malaria.[2,3]

In Saudi Arabia, screening of blood donors is dependent on both a questionnaire, and microscopy of thick and thin blood films. The blood bank questionnaire, however, does not include questions on travel history to malarious areas in the previous 6 months, nor does it inquire on residence in malarious areas in the three years prior to blood donation. These three cases of transfusion malaria may, therefore, have resulted from incomplete screening of blood donors. Blood banks should exclude donors who had traveled to malarious areas during the preceding 6 months or if prophylaxis had been taken in the past 3 years. A more sensitive test to detect low parasitemia, such as immunochromatography, should be used.

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# *Salmonella* outbreak among attendees of two wedding parties, Riyadh, July 2000.

On July 1st, 2000, an outbreak of food poisoning occurred among attendees of two wedding parties in Riyadh city, both served by the same restaurant. A team from the Field Epidemiology Training Program investigated this outbreak. A retrospective cohort study was conducted. A case was defined as any person who ate at party A or B, on July 1st 2000, and developed diarrhea within 3 days.

We attempted to interview all the attendees of both parties whether they had become sick or not. The discharge summaries and laboratory investigations of those who were admitted to hospitals were reviewed. The restaurant was visited, and a list of food items and details of food preparation techniques were obtained.

The dinner meal was served around 11:00 p.m on July 1st , and symptoms started to appear 5 hours up to 53 hours later. The median incubation period for both parties was 15 hours and the epidemic curve suggested a common source outbreak.

We were able to interview 160 cases (134 from party A and 26 from party B) and 123 controls (110 from party A and 13 from party B). Among patients of party A, 74 (55.2%) were males and 60 (44.8%) were females (1.2:1 male to female ratio). Among patients of party B, 23 (88.5 %) were males and 3 (11.5 %) were females (7.7:1 male to female ratio). All the patients were Sudanese with a median age of 28 years (Range 1-60).

At party A, out of 134 attendees who had become sick, 15 (11.2%) had been hospitalized. The most common symptoms were diarrhea (100%), colicky abdominal pain (94.4%), and fever (91.3%). Out of 15 food items served, 8 were significantly associated with the illness (Table 1). At party B, among 26 who had become sick, only one (3.8%) had been hospitalized. The median duration of diarrhea was three days and that of vomiting was one day. Mayonnaise salad was the only food item served at both parties that was significantly associated with the outbreak (RR=11, 95% CI = 1.7—71.3) (Table 1).

A total of 48 patients had a positive stool culture for *Salmonella* group B non-typhi and 10 others for *Salmonella* of unidentified group. Out of 7 restaurant workers, two (28.6%) were found to have *Salmonella* group B in their rectal swab, but with no history of diarrhea.

Preparation of the mayonnaise salad involved peeling and slicing potatoes with bare hands, then mixing them with thawed commercial vegetables. The mixture was boiled for 15 minutes then kept at room temperature for over 30 minutes until it cooled down. After that, commercial mayonnaise was added to the vegetable salad in stainless steel jars, mixed well, and kept at room temperature (35-40°C) a median of five hours before serving. At both parties, a restaurant worker served the meal to each guest.

*— Reported by: Dr. Tami Al-Bassam, Dr. Abdulelah Al-Ghelani, Dr. Adel Turkistani, Dr. Randa Nooh (Field Epidemiology Training Program), Dr. Masaed Al-Sulaiman, Dr. Nasser Al-Sheik (Riyadh Health Directorate).*

**Editorial note:** The results point to the mayonnaise salad as the most likely food item responsible for this outbreak. Several reported outbreaks due to *Salmonella* species have implicated salad as the vehicle for transmission.[1-3] Other food items associated with the outbreak in party A was most probably due to cross-contamination.

The source of the outbreak was probably an asymptomatic food handler, who have been identified as sources of *Salmonella* infection in many outbreaks.[4,5] *Salmonella* can survive on fingertips for at least 3 hours. Inoculates of less than 100 organisms per finger can lead to contamination of 90% of handled food.[5]

Among the ingredients of the mayonnaise salad, potato was most likely the initially contaminated ingredient. However, it is known that when food is contaminated with fecal bacteria from hands, the contamination level is usually very low, and a serious hazard only arises if the bacteria are allowed to multiply to harmful numbers under adverse storage conditions.[6] In this outbreak, time-temperature abuse and inadequate heat treatment were the main factors in producing this explosive outbreak.

Although the restaurant claimed using commercial mayonnaise, local preparation of mayonnaise using raw eggs is a widespread practice. During the past 10 years, 12 other studies were conducted by the FETP investigating outbreaks of Salmonellosis, 6 of which have incriminated the use of raw eggs and restaurant-prepared mayonnaise as the vehicle of trans-

*(Continued on page 23)*

Table 1: Attack rates for some food items during the food poisoning outbreak among attendees of two wedding parties, Riyadh, July 2000.

| Food items | Party A | | | Party B | | |
|---|---|---|---|---|---|---|
| | RR | 95 % CI | P-value | RR | 95 % CI | P-value |
| Chicken | 1.44 | 1.05-1.96 | 0.007 | 2.9 | 0.89-9.46 | 0.01 |
| Meat | 1.22 | 1.0-1.49 | 0.052 | 1.43 | 0.87-2.35 | 0.14 |
| Sausage | 1.39 | 1.15-1.68 | 0.001 | 1.36 | 0.89-2.08 | 0.14 |
| Cheese | 1.27 | 1.04-1.55 | 0.02 | 1.33 | 0.68-2.60 | 0.37 |
| Musaqa | 1.61 | 1.40-1.85 | 0.00 | 1.3 | 0.87-1.96 | 0.27 |
| Pasta | 1.36 | 1.10-1.67 | 0.003 | 1.19 | 0.73-1.97 | 0.45 |
| Bread | 1.34 | 1.06-1.69 | 0.008 | 1.33 | 0.68-2.60 | 0.33 |
| Mayonnaise | 2.98 | 2.17-4.10 | <0.001 | 11 | 1.7-71.3 | <0.001 |

# An Outbreak Of Food Poisoning Among Two Families In Samta City, Jazan.

In April 8, 2000, Samta General Hospital received 13 cases from two families showing symptoms of gastroenteritis, abdominal pain, nausea, vomiting and diarrhea. They gave a history of eating common food at a restaurant in Samta. All the cases were admitted to the hospital, received treatment, improved and discharged within the next few days. Our team was assigned to investigate this outbreak. A case control study was conducted. A case was defined as any individual who ate from restaurant A on April 8, 2000 and had developed abdominal pain, and/ or diarrhea and vomiting. Medical records of each affected individual were reviewed. Microbiology laboratory records were reviewed for all stool samples over the study period. A standard questionnaire was developed to interview the cases and controls. Stool samples and vomitus of the admitted patients were cultured. Restaurant workers were interviewed to obtain information on the food menu, and methods of food storage and handling at the restaurant.

The cases belonged to 2 different families, most of them were children. Four additional cases were found, yielding a total of 17 cases; 6 males (35.3%) and 11 females (64.7%). Cases were between 1 to 41 years of age, 11 (64.7%) were below 10 years old (median age =9). They developed symptoms within 2 to 3 hours of eating the meal. Symptoms were abdominal pain 100%, vomiting 82%, nausea 76%, diarrhea 76%, fever 35%. The food items they reported eating were chicken, rice, salad, mosaga, and marsa (a local dish). The only food item incriminated as cause of the outbreak was chicken (OR 10.96, 95% CI 1.84-84.79, P-value 0.001). Stool and vomitus culture showed that 5 cases were positive for Yersenia entercolitica. Furthermore, the stool culture of the restaurant workers were positive for Salmonella.

— *Reported by: Dr. Ahmed Sahli, Dr. Adel Turkistani, Dr. Randa Nooh, Dr. Adel Fatany (Field Epidemiology Training program).*

**Editorial Note:** Five patients had positive stool cultures for Yersinia entercolitia, an organism not commonly recognized as a cause of a food poisoning outbreak in Saudi Arabia. Yersinia entercolitica is an aerobic gram-negative bacillus, a member of the family Enterobacteriaceae. Its animal reservoirs include pigs and dogs. The organism can be found in water, soil, and vegetables. It grows well in refrigerated foods and is isolated more commonly during the winter months and in cooler climates.[1] The majority of cases are mild and go unrecognized. School age children are the most susceptible, presenting with enterocolitis, fever and diarrhea. The incubation period ranges from 1-14 days.[2] Identification requires selective agar, alkali treatment, and cold enrichment techniques.[3,4]

The epidemiological investigation and clinical presentation, however, make Yersinia entercolitica a very weak likelihood, since the incubation period was much shorter (2-3 hours). Yersinia entercolitica is also known to have a longer duration of symptoms.[3] Furthermore, the organisms need selective media to grow, which was not used in this case. The fact that these organisms have not been previously isolated in this area, in addition to the previous factors, may indicate that the laboratory mistook a different enteropathogen for Yersinia.

The stool culture of restaurant workers showed that two were positive for Salmonella. However, this could be excluded as the cause of the outbreak, since Salmonella was not isolated from any of the patients, and the symptoms and incubation period are not competent. Although the laboratory investigations did not isolate Staphylococcus aureus from the cases or the restaurant workers, it may, however, be the causative organism of this outbreak, since the incubation period was very short (2-3 hours), and similar clinical symptoms appeared. Bacillus cereus may be another possibility, but could not be confirmed by laboratory tests. Further epidemiological investigations on the microbiology of diarrheal illness in this region are needed to obtain a clear idea of the incidence of Yersinia.

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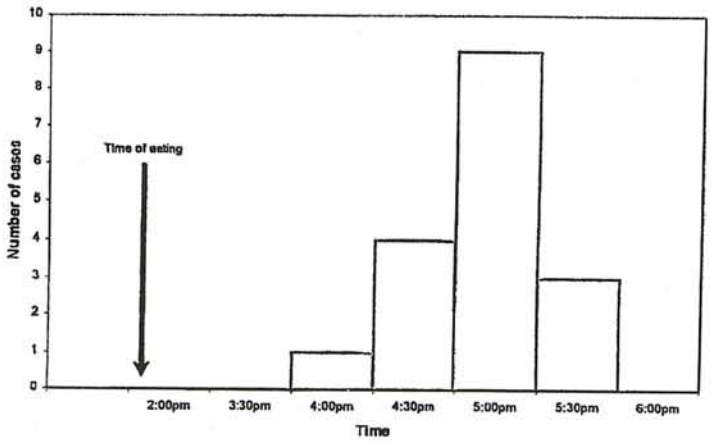
Figure 1: Epidemic Curve for 17 Gastroenteritis cases after eating from a restaurant on April 8, 2000 in Samta, Jazan.



# ملخص باللغة العربية

## دراسة عن المواليد ناقصي الوزن ونسبة الوفيات بينهم في أحدى مستشفيات الرياض.

ان نقص الوزن بين المواليد له علاقة قوية بزيادة نسبة الوفيات و الأمراض. من أهداف هذه الدراسة بحث عدد المواليد ناقصي الوزن عند الولادة ( أقل من ألفين وخمسمائة جرام ) خلال الفترة من ١ يناير حتى ٣٠ يونيه ١٩٩٩م، تحديد معدل الوفيات بينهم و التعرف على الأسباب المحتملة للوفاة.

تمت مراجعة سجلات الدخول لغرف الولادة، ملفات الأمهات، و سجلات العناية المركزة للمواليد. كان إجمالي عدد المواليد في هذه الفترة (٨٧٤٩) مولوداً. بلغ عدد المواليد ناقصي الوزن عند الولادة أقل من ٢٥٠٠ غرام (٥٠٤) مولود، معظم الولادات كانت طبيعية وعددها ٤١٣ (٨١,٩%)، وعدد الولادات القيصرية ٩١ حالة (١٨,١%). عدد المواليد ١٥٠١ إلى ٢٥٠٠ غرام ٣٥٦ مولود (٧٠,٦%)، و عدد المواليد ١٠٠١ إلى ١٥٠٠ غرام ٧٦ مولود (١٣,٣%)، و عدد المواليد ١٠٠٠ غرام أو أقل ٨١ مولود (١٦,١%). نسبة الوفيات في جميع المواليد ناقصي الوزن كانت مولود واحد لكل مائة مولود (١ %). عدد الأحياء في جميع المجموعات ٤٢٣ مولود (٨٤%)، عدد الوفيات في جميع المجموعات ٨١ مولود (١٦%). عدد المواليد الذين تم تحويلهم للحضانة ٢٨٧ مولود (٦٧,٨%)، و عدد الوفيات الكلي ١٥٧ (٣١,٢%). أما بالنسبة للأسباب العامة المحتملة لوفيات المواليد ناقصي الوزن كانت الاختناق الولادي ١٩ (٢٥%)، داء الغشاء الزجاجي ١٥ (١٩,٧%)، ولادة مبكرة ١٤ (١٨,٤%) و عاهات خلقية ١٢ (١٥,٨%).

تمت التوصية بالعمل على تقليل نسبة الولادات المبكرة عن طريق التوعية الصحية و تحسين وضع خدمات مراكز العناية المركزة لتقليل معدل الوفيات، تقوية البرامج التي تعتني بالأم الحامل من حيث المتابعة المستمرة وخصوصا اللاتي لديهن تاريخ مرضي مزمن، إيجاد نظام يسمح بتحويل الحالات الحرجة إلى مراكز الحضانة المتقدمة، تقوية ودعم الدراسات الإحصائية المتعلقة بالمواليد وصحة الأم وذلك لبناء نظام قوي يتسنى من خلاله معرفة الطرق المؤدية لتحسين الوضع الصحي في المملكة.

إعداد: د. علي الرميخان (برنامج الوبائيات الحقلي، وزارة الصحة)، د. عواطف عالم (قسم طب الأسرة و المجتمع، كلية الطب، جامعة الملك سعود).

## دراسة عن حالات الملاريا الناتجة عن عمليات نقل الدم بمنطقة الرياض.

قام فريق الوبائيات الحقلي بعمل استقصاء وبائي لثلاث حالات ملاريا في مدينة الرياض. تمت مراجعة الملفات الطبية للحالات و مراجعة بنك الدم المركزي للإطلاع على اعداد وأرقام وتواريخ وحدات الدم التي أعطيت للحالات الثلاثة، بالإضافة إلى مراجعة طرق إجراء الفحص لعينات الدم للملاريا. تم الاتصال بالأمهات والسؤال عن تاريخ إصابة بالملاريا قبل وأثناء الحمل وعن أي أعراض للملاريا و السفر إلى أماكن موبوءة. تمت مراجعة التدخلات الطبية للمرضى أثناء فترة التنويم بالمستشفيات، و التقصي عن مدى سلامة سبل إعطاء الأدوية الوريدية والمحاليل الطبية ووسائل التعقيم. كما تم الاتصال بالمتبرعين والسؤال عن الإصابة بالملاريا أو الإقامة أو السفر إلى مناطق موبوءة.

بالنسبة للحالة الأولى تبين أن الطفلة سعودية أدخلت المستشفى و هي تعاني من حمى لمدة يوم واحد مع خمول و عدم الرغبة في الرضاعة. وعند فحصها مخبريا كانت النتيجة إيجابية للملاريا (P.vivax). و كانت قد سبق لها التنويم في مستشفى الولادة والأطفال، حيث أعطيت وحدة واحدة من كريات الدم الحمراء المكثفة من متبرع مقيم بالمملكة ولا يذكر إن كان قد أصيب بالملاريا من قبل، كما وأنه لم يسبق له التعرض لعملية نقل دم، وأن آخر زيارة له إلى بلده كانت قبل ثلاث سنوات.

أما الحالة الثانية فكانت طفلة سعودية أدخلت إلى مستشفى الولادة والأطفال وعمرها ١٩ يوماً وهي تعاني من عيوب خلقية في القلب، الأمر الذي تطلب نقل وحدات متعددة من الدم بلغت ٣٨ وحدة (٢٤ وحدة بلازما و ٨ وحدات كريات دم حمراء مكثفة و ٨ وحدات صفائح دموية). وقد أدخلت المستشفى مرة أخرى و هي تعاني من ارتفاع في درجة الحرارة. وعند فحصها مخبرياً كانت النتيجة إيجابية للملاريا (P.falciparum). و قد انحصر احتمل انتقال العدوى إليها في أربعة متبرعين من مناطق موبوءة بالملاريا، وواحد منهم قد سبق له الإصابة بالملاريا قبل سنة كما أنه قد سافر إلى منطقته قبل شهرين من التبرع.

بالنسبة للحالة الثالثة كان طفلاً سعودياً خديجاً، ولد في مستشفى الولادة والأطفال وكان يعاني من صعوبة في التنفس مع زرقة واصفرار و أدخل قسم الحضانة حيث أعطيت له أعداد كبيرة ومتفرقة من وحدات الدم، مجموعها ٦٤ وحدة (منها ٢٥ وحدة بلازما و ١٥ وحدة كريات دم حمراء مكثفة و ٢٤ وحدة صفائح دموية). وقد عمل له فحص مخبري للملاريا كانت نتيجته إيجابية (P.falciparum). وقد انحصر احتمال انتقال العدوى إليه في ثلاثة متبرعين من مناطق موبوءة بالملاريا، و سبق لهم السفر إلى بلدهم قبل التبرع.

عند فحص استبيان التبرع بالدم وجد انه يحتوي على أسئلة عن التاريخ المرضي للمتبرع ولكن لا يحتوي على أسئلة تتعلق بالسفر إلى المناطق الموبوءة بالملاريا خلال الستة أشهر السابقة للتبرع. و قد كانت جميع عينات الدم من المتبرعين ال١٠٥ سلبية لطفيل الملاريا، لكن مما يجدر ذكره أن المتبرع قد يحتوي دمه على طفيليات قليلة العدد إذا كان في مراحل المرض الأولى أو كان قد تناول علاج وقائي فتكون حساسية شريحة الاختبار ضعيفة.

الاحتمال الراجح هو انتقال العدوى عن طريق الدم المنقول من أحد المتبرعين ممن لديه نسبة منخفضة من الطفيليات. تمت التوصية على إضافة أسئلة لاستبيان المتبرعين بالدم تستفسر عن السفر إلى مناطق موبوءة بالملاريا خلال الستة الشهر الماضية، الإقامة في منطقة موبوءة بالملاريا أو الإصابة بالملاريا خلال الثلاث سنوات الماضية. يجب استبعاد اخذ الدم لمدة ستة أشهر من الأشخاص الذين سافروا إلى مناطق موبوءة ولم يصابوا بالحمى، ولمدة ثلاث سنوات من الذين أصيبوا بالملاريا وعولجوا منها أو القادمين من مناطق موبوءة . كما يجب استخدام فحوصات مخبرية أكثر حساسية.

اعداد: د. أحمد سهلي، د. عادل فطاني، د. عبدالعزيز المزم، د. عادل تركستاني (برنامج الوبائيات الحقلي)، شادية السوداني، هند الزومان (مجمع الرياض الطبي).

# Low Birth Weight, cont ....

(Continued from page 18)

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# *Salmonella* outbreak, cont ....

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mission. Time-temperature abuse and poor temperature control in storing eggs (in both markets and homes) also contribute to infection.

It is extremely important that restaurants only use commercial mayonnaise. It is also advisable that restaurants use only pasteurized eggs for preparation of food items that require raw eggs as an ingredient. All restaurants should be subject to standards of safety in food preparation with emphasis on avoidance of cross-contamination and time-temperature abuse. Promotion of health education to food handlers is recommended, along with application of hazard analysis critical control point to routine inspection of restaurants. Salmonella excretors should not handle food until their stool cultures have proved negative for at least 3 times. Public awareness should be raised regarding the high risk of Salmonellosis when raw eggs are used in cooking.

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## Mark your calendar . . .

### Outside the Kingdom

**April 22-24, 2002: 6th International Conference on Malignancies in AIDS and Other Immunodeficiencies: Basic, Epidemiologic, and Clinical Research.**

Host organisation: National Institutes of Health, Bethesda, Maryland. Contact: Jaime Quinn, National Cancer Institute. Tel: 301-4966711, Fax: 301-4960826. E-mail: jquinn@mail.nih.gov
Website: http://www.cancer.gov/dctd/aids/conference

# Selected notifiable diseases by region, Jul – Sept 2001

| | Riyadh | Makkah | Jeddah | Taif | Madinah | Qassim | Eastern | Hasa | Hafr AlBatin | Asir | Bisha | Tabuk | Hail | Al Shamal | Jizan | Najran | Baha | Al Jouf | Goriat | Gonfuda | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measles | 3 | 27 | 7 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Mumps | 36 | 9 | 12 | 0 | 25 | 19 | 14 | 15 | 11 | 16 | 5 | 11 | 5 | 1 | 10 | 9 | 1 | 1 | 3 | 1 | 204 |
| Rubella | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 |
| Varicella | 1105 | 168 | 470 | 79 | 226 | 493 | 597 | 620 | 342 | 370 | 183 | 208 | 80 | 40 | 39 | 72 | 48 | 45 | 58 | 21 | 5264 |
| Brucellosis | 171 | 18 | 9 | 75 | 43 | 197 | 43 | 10 | 53 | 213 | 73 | 4 | 126 | 15 | 37 | 34 | 11 | 12 | 5 | 3 | 1152 |
| Meningitis | 9 | 7 | 4 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 31 |
| mening. | | | | | | | | | | | | | | | | | | | | | |
| Meningitis, | 55 | 10 | 5 | 5 | 13 | 4 | 5 | 12 | 3 | 6 | 0 | 1 | 3 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 131 |
| other | | | | | | | | | | | | | | | | | | | | | |
| Hepatitis A | 97 | 28 | 31 | 0 | 97 | 86 | 64 | 22 | 74 | 100 | 16 | 40 | 12 | 8 | 6 | 33 | 1 | 20 | 84 | 0 | 819 |
| Hepatitis B | 244 | 98 | 280 | 5 | 68 | 28 | 123 | 10 | 1 | 69 | 10 | 10 | 4 | 2 | 15 | 4 | 66 | 2 | 0 | 8 | 1047 |
| Hepatitis C | 157 | 55 | 279 | 0 | 31 | 6 | 70 | 13 | 1 | 21 | 9 | 6 | 3 | 2 | 2 | 4 | 26 | 0 | 0 | 2 | 687 |
| Hepatitis, | 48 | 21 | 5 | 0 | 7 | 3 | 0 | 4 | 0 | 40 | 0 | 62 | 16 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 289 |
| unspecified | | | | | | | | | | | | | | | | | | | | | |
| Typhoid & | 12 | 13 | 2 | 0 | 6 | 4 | 9 | 5 | 0 | 14 | 5 | 0 | 24 | 2 | 6 | 1 | 0 | 0 | 1 | 0 | 104 |
| paratyphoid | | | | | | | | | | | | | | | | | | | | | |
| Amoebic | 16 | 2 | 381 | 21 | 9 | 15 | 16 | 3 | 2 | 165 | 26 | 9 | 5 | 0 | 106 | 8 | 13 | 0 | 12 | 0 | 809 |
| dysentery | | | | | | | | | | | | | | | | | | | | | |
| Shigellosis | 26 | 0 | 2 | 0 | 1 | 4 | 16 | 13 | 3 | 0 | 0 | 14 | 0 | 0 | 11 | 15 | 0 | 0 | 3 | 0 | 108 |
| Salmonellosis | 144 | 2 | 26 | 0 | 7 | 7 | 218 | 42 | 1 | 10 | 0 | 15 | 2 | 0 | 3 | 37 | 3 | 0 | 2 | 0 | 519 |
| Syphilis | 10 | 0 | 8 | 0 | 0 | 0 | 2 | 11 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 39 |
| VD, other | 6 | 0 | 31 | 0 | 0 | 0 | 8 | 27 | 0 | 6 | 0 | 0 | 0 | 0 | 7 | 1 | 3 | 0 | 0 | 0 | 89 |

# Comparisons of selected notifiable diseases, Jul–Sept 2000-2001

| DISEASE | Jul-Sept 2001 | Jul-Sept 2000 | Change % | Jan-Sep 2001 | Jan-Dec 2000 | DISEASE | Jul-Sept 2001 | Jul-Sept 2000 | Change % | Jan-Sep 2001 | Jan-Dec 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphteria | 0 | 0 | 0 | 0 | 0 | Meningitis, other | 131 | 157 | -17 | 452 | 753 |
| Pertussis | 13 | 9 | 44 | 32 | 21 | Hepatitis A | 735 | 601 | 22 | 2465 | 2250 |
| Tetanus,neonatal | 13 | 2 | 550 | 20 | 13 | Hepatitis B | 1047 | 868 | 21 | 2102 | 3361 |
| Tetanus, other | 1 | 3 | -67 | 2 | 10 | Hepatitis C | 687 | 553 | 24 | 2931 | 2134 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | Hepatitis, Unspec. | 289 | 278 | 4 | 1129 | 1041 |
| Measles | 48 | 188 | -74 | 94 | 617 | Typhoid/paratyph | 103 | 96 | 7 | 272 | 420 |
| Mumps | 201 | 370 | -46 | 679 | 1388 | Amoebic dysent. | 797 | 904 | -12 | 2190 | 3244 |
| Rubella | 7 | 35 | -80 | 35 | 202 | Shigellosis | 105 | 134 | -22 | 466 | 501 |
| Varicella | 5206 | 3521 | 48 | 24548 | 20076 | Salmonellosis | 517 | 823 | -37 | 1398 | 2045 |
| Brucellosis | 1147 | 1215 | -6 | 3963 | 5320 | Syphilis | 39 | 51 | -24 | 105 | 165 |
| Meningitis, Men. | 31 | 22 | 41 | 269 | 337 | VD, other | 89 | 114 | -22 | 311 | 428 |

# Diseases of low frequency, Jul – Sept 2001

Yellow fever, plague, diphtheria, poliomyelitis, rabies, puerperal sepsis: No cases
Pertussis: 13 (Riyadh 2, Makkah 3, Madinah 1, Eastern 4, Hassa 1, Hail 1, Jazan 1)
Tetanus neonatorum: 13 (Makkah 8, Jeddah 4, Taif 1), Echinococcosis: 4 (Riyadh 3, Hafr AlBatin 1)
Guillain-Barre syndrome: 21 (Riyadh 5, Jeddah 1, Taif 4, Madinah 1, Qassim 1, Hassa 1, Hafr AlBatin 1, Assir 2, Shammal 1, Jazan 3, Eastern 1)