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تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحقلي

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Keratoconjunctivitis outbreak in Al-Jubail, Saudi Arabia - April 2003

On 26/4/2003 an increase in keratoconjunctivitis cases was reported in the industrial city of Jubail, which is about 100 km north of Dammam in the Eastern Province. Most of the cases were school children. The Objectives of this study were to evaluate the existence, magnitude and distribution of the outbreak, to identify risk factors responsible, and to find practical solutions for controlling this outbreak and prevention of similar events in the future.

All cases reported to Ministry of Health in Riyadh were reviewed and all the sources visited to ascertain the number of cases including Health Affairs Department in Dammam, Health services and Schools of the Royal Commission of Jubail. A 1:1 case–control study was conducted. A confirmed case was defined as any person living or working at Jubail industrial city from 12/4/2003 and having at least two of the following symptoms: red eye, eye pain, edema, excessive tearing, photophobia or foreign body sensation; examined and diagnosed by the ophthalmologist. Controls were chosen mainly from the school student population who didn't fit the case definition. Sampling was simply random from the school students and the ophthalmology clinic visitors. Questionnaires were filled either by direct interview or by telephone. Six random scrub specimens from the cases were sent to King Faisal specialist hospital for analysis. Air pollution levels in the residential area were reviewed.

The total number of reported cases till the end of April 2003 was 198. Males were 160 (83%) and females 38 (17%). Cases were registered from 25 schools in Jubail; 167 (84%) were from intermediate school or the final 2 years of primary school. 98% of cases were Saudis. All schools had standard buildings where the class was 6×8 m, well ventilated and occupied by not more than 20 students, spaced from each other by about 1 m. All houses were new, clean and spacious

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with good sanitation.

The total case – control study sample was 240; 120 cases (63% from the total number of reported cases) and 120 controls. Among cases there were 102 males (85%) and 18 females (15%). 88 cases (75.9%) were in the 10-20 year age group and the mean age was 14 years. Al-Khaleej intermediate school for boys, where the first case appeared, had the highest number of cases 38 (35%) out of 108 male cases. Al-Deffi district, which had 3 adjacent schools, had the highest number of cases 92 (76.7%). Red eye was the predominant symptom among cases (100%) followed by eye pain and edema.

The index case was an intermediate school student from Al-Khaleej school, but he had already left the school and moved with his family to an unknown location. 28 (23.3%) of the cases reported contact with ill individuals at home, and 90 cases (75%) reported contact with ill individuals at school before onset of symptoms. Males were at higher risk of getting the disease than females (OR=1.13, 95% CI=0.14-1.88). There was no association between younger age (below 20) and getting the disease (OR=0.11, 95%CI= 0.11-1.57). Acquiring infection by contact with ill people at home was about 50% higher than from other places, but the association was not statistically significant (OR=1.52, 95% CI=0.76–3.05). Acquiring infection from school contacts was associated with a lower risk in comparison to contact in other places (OR=0.36, 95%CI = 0.17-0.78) and the association was statistically significant. 47 cases (39.2%) had more than 8 members living in the same household. The association between number of family members and acquiring infection was higher with larger families (OR=1.15, 95% CI=0.66–1.99), and there was also an association between the number of bedrooms in the household and acquiring infection (OR=1.85, 95%CI=0.69–5.05) but both associations were not statistically significant. The only statistically significant association was between lower level of education (below secondary school) and acquiring infection (OR=2.03, 95%CI=1.08-3.84). Air pollution records were found to be within the usual levels in the residential area.

Stratified analysis showed that age and gender did not confound the observed associations between the variables (contact with ill students and education level) and acquiring infection. Also, they were not effect modifiers.

The epidemic curve (Figure 1) shows a sharp increase in the number of cases on 14/4/2003, then a slow decline from 15/4/2003 and afterward, which may be due to the long communicability period of the disease (up to 14 days). The fall in the number of cases at the end of the period may be attributable to the control and preventive measures applied at that time in the form of isolation of sick students or effective health education on the disease and its complications. We cannot elaborate on the incubation period in this epidemic curve because the index case could not be contacted.

– Reported by: Dr. Fahad Al Sweidy, Dr. Abdullah M. Al Rabeah (Field Epidemiology Training Program).

Editorial notes: Epidemic keratoconjunctivitis (EKC) is a type of adenovirus ocular infection and is one of the most common causes of acute viral conjunctivitis. It is highly contagious and has the tendency to occur in epidemics.[1] EKC has unique clinical features, producing a sudden onset of acute follicular conjunctivitis The ocular symptoms are mainly sudden onset of irritation, soreness, red eye, photophobia, foreign body sensation, and excessive tearing. In more severe cases, patients can present with ocular and periorbital pain and decreased visual acuity. Symptoms tend to last for 7-21 days. The fellow eye tends to be involved in more than 50% of the cases within 7 days of onset. Both membranes and pseudomembranes can occur in EKC with a distinguishing corneal involvement that ranges from diffuse, fine, superficial keratitis to epithelial defects to subepithelial opacities.[2] Often, a recent history of an eye examination or exposure within the family or at work is present.[3] The incubation period is 2-14 days, and the person may remain infectious for 10-14 days after symptoms develop. Diagnosis is mainly clinical. Treatment is mostly symptomatic (cold compresses and artificial tears). In severe cases, mild topical corticosteroids can be used, especially for the subepithelial opacities, iritis or pseudomembranous conjunctivitis.[4] EKC is a self-limiting disease, tending to resolve spontaneously within 1-3 weeks without significant complications. In 20-50% of cases, corneal opacities can persist for a few weeks to months (rarely up to 2 y).[1,2,3] No gender predilection exists. The infection is more common in adults, but all age groups can be affected.

Because of low, natural immunity against adenovirus in the general population, every individual is considered susceptible to infection. EKC epidemics tend to occur in closed institutions (eg, schools, hospitals, camps, nursing homes, workplaces). Direct contact with eye secretions is the major mode of transmission. Other possible methods of transmission are through air droplets and possibly swimming pools. Many epidemics have also been initiated in ophthalmology outpatient clinics by direct contact with contaminated diagnostic instruments.[4] Despite extensive literature search there was no documented EKC outbreak in Saudi Arabia in the literature.

In this outbreak, about 62% of the total number of cases appeared in 3 adjacent schools at Al-Deffi district where the index case appeared and the epidemic started. The rest of the cases spread in small and discrepant rates in the other 22 schools outside and at the peripheries of Al-Deffi and most of them were secondarily infected patients through household contact with the primary cases of Al-Deffi schools.

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Food-borne disease outbreak in a boys primary school in Dammam, October 2003 G

On Tuesday 18 Sha'aban 1424 H (14 October 2003 G) a national news paper reported an incident of abrupt abdominal colic and vomiting affecting more than 35 students at a primary school at the National Guard residence compound (NGRC) in Dammam, Eastern Province, after taking their breakfast from the school canteen the previous day. The Field Epidemiology Program (FETP) decided to investigate this outbreak. The Objectives of the outbreak investigation were to identify cases and the implicated food item(s), determine the factor(s) associated with the occurrence of the outbreak, establish measures to control and contain the spread of the outbreak, promptly recognize the causative agent to allow specific treatment of cases, and place recommendations to prevent future outbreaks.

The school where the outbreak occurred was a boy's primary school located within the National Guard Residence Compound (NGRC). It is attended by 539 students and 45 teachers and management staff. The school-break lasts from 9:15 - 9:35 am. The students usually buy their breakfast from the school canteen. On the day of the incident, the teachers noticed a mass complaint of sudden abdominal pain and vomiting among the students; 26 students were taken to the emergency departments of both the National Guard Health Center and the Imam Abdulrahman Al-Faisal Hospital - Dammam, close by.

A case-control study was carried out. Any student who had complained of nausea, abdominal colic, vomiting, diarrhea, or any other gastrointestinal symptoms on the day of the outbreak were brought to the investigative team for interview. A case was defined as any student from the school who had sudden symptoms of nausea, abdominal colic, vomiting or diarrhea, after eating or dinking food or drinks bought from the school canteen on Monday 17 Sha'aban 1424 H. A control was selected randomly for each case from the same class. If none were available then the control was selected from the same grade, or from the next lower grades.

Sixty-seven students met our case definition and were considered as cases, and another 67 were selected as controls. Among the cases, 33 (49.25%) had consulted the health services of the National Guard; almost all were discharged on the same day in good health condition and were completely recovered by the next day, except for one student who needed gastric lavage and another who was hospitalized for 2 days.

The most common symptoms reported were abdominal colic (92.5%), fever (34.3%), headache (34.3%), vomiting (31.3%), nausea (22.4%) and diarrhea (16.4%). Their ages ranged from 6-14 years (median 12 years). Most of the cases were from the 6th grade (68.7%). The Incubation Period (IP) ranged from 15 minutes - 8.5 hours, with a median IP = 55 minutes (Figure 1).

Regarding exposure of the cases and controls to food items, a high OR was found for eating za'atar fata'yer (OR =3.9, 95% CI = 1.9-8.0) and for drinking bottled water (OR= 8.6, 95% CI= 1.9-39.5). Other food items had no significant OR. Stratified analysis of exposure to za'atar fata'yer and getting sick in different grades showed a significant OR for students of the sixth grade only (OR = 6.2, 95% CI= 2.36-16.11). Further analysis of exposure to the bottled water failed to procure any real association.

All the stool samples collected from the cases and one gastric lavage sample were negative for Food Borne Disease (FBD) pathogens. One za'atar fateera sent for toxicological and microbiological testing on the same day of incident was considered safe for human consumption. Food and drinks items collected from the school canteen the day following the incident and sent for both toxicological and microbiological testing were also safe. Throat swab, nasal swab, rectal swab and nail samples taken from the school canteen seller were negative. Some of the swabs of the bakery workers had grown *staphylococcus aureus and E. coli*. Fata'yer samples collected from the bakery had grown *staph. aureus and E. coli* as well.

On inspection of the school canteen and the canteen supplier warehouse, they were found to be unsuitable for storing food. The canteen sells za'atar and cheese fata'yer (baked dough pies filled with za'atar herb or cheese), in addition to long-life juices, milk, potato chips, biscuits and mineral water bottles. The za'atar and cheese fata'yer are brought to the school canteen on a daily basis at about 8:15 am and kept in plastic baskets in the canteen. Other items are stored in the canteen and supplied periodically. The canteen seller had a valid health certificate, no current hand wounds or blisters but he had long fingernails and was not wearing a uniform. On inspection of the za'atar and cheese fata'yer, they were singly wrapped in a plastic wrap that had no labeling. Some had no written expiry date and some plastic wraps were open. The canteen supplier actually buys the fata'yer from another local bakery. He picks them

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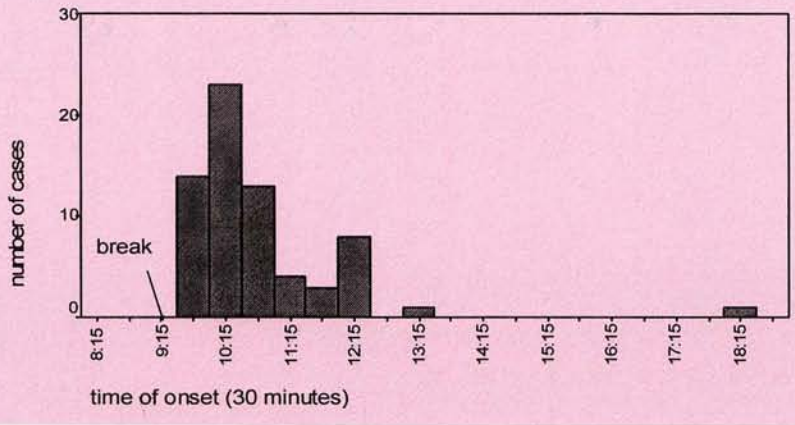
Fig 1; Epidemic Curve of Food borne disease outbreak, Dammam 2003



Food-borne disease outbreak in a boys primary school in Dammam, October 2003 G, contd .....

up at 6:00 am in plastic baskets and distributes them to the schools using poorly air-conditioned trucks, that reach the school where the outbreak occurred last, at about 8:15 am. The supplier claimed that left over fata'yer were distributed to the social society. No other schools supplied by the same supplier had reported a similar incident.

The bakery that bakes the fata'yer was located in Dammam, with 30 workers and a supervisor. All had valid health certificates. Some of the workers were not wearing either head cover or gloves, none had any skin lesion, and they denied any history of gastrointestinal symptoms. They start preparation of the Fata'yer at midnight by mixing the wheat flour with milk powder, yeast, water, oil, eggs, sugar and salt in a large stainless-steel bowel of the mixing machine. When the dough is ready it is left to rise for 1.5 – 2 hours, then it is cut into small pieces by another machine and left to relax for another 1/2 hour, after which the dough is filled manually with the desired filling (cheese, za'atar and olive oil mixture). The Fata'yer are then baked in a hot oven for 10-15 minutes, after which they are singly wrapped in a plastic wrap and put in large plastic baskets, ready for the dealer to pick up at around 6:00 in the morning.

– Reported by: Dr. Alia A. Al-Naji, Dr. Randa Nooh (Field Epidemiology Training Program).

Editorial notes: The short incubation period of mostly upper gastrointestinal symptoms reported in this outbreak suggests food borne intoxication rather than food borne infection. Food Borne Intoxication can be caused by certain bacteria, which under favorable growth conditions produce enterotoxins in food before it is consumed. The most commonly implicated microorganisms include *Staphylococcus aureus, Bacillus cereus, Clostridium perfringens,* and *Vibrio parahaemolyticus*. It generally takes less than 8 hours for these organisms to elaborate enough toxins to cause symptoms. The disease is characterized by an abrupt onset of symptoms of severe nausea, vomiting, diarrhea, and prostration with little or no fever.[1]

In this outbreak, the three possible causes to be considered are: *Staph. aureus* enterotoxins, *Bacillus cereus* vomiting enterotoxins, or chemical poisoning. Za'atar fata'yer is the most probable implicated food item. Contamination with any of these agents could have occurred at any stage of fata'yer production; starting from the raw material along the processing and handling line, up to transport and storage before selling to the consumers.

Powder milk contaminated with *Staph. aureus* entertoxins is well documented to cause wide spread outbreaks.[2,3] *Staph. aureus* from the food handler could have contaminated the dough and produced toxins when given sufficient time.[2,3] Pesticides and *Bacillus cereus* spores – which are widely available in the environment – could have contaminated either the wheat flour or za'atar herbs. With water and appropriate temperature and time, available in the dough, the spores germinate and the bacteria multiplies, producing its toxins.[4] Both *Bacillus cereus* and *Staph. aureus* enterotoxins are heat stable and would not have been destroyed by baking of the fata'yer. However, this scenario is less likely to be true in the current outbreak, because it would have caused a much larger outbreak involving more than one school. The most likely scenario is that the baked dough was contaminated by *Staph. aureus* from the food handlers during wrapping, or that *Bacillus cereus* spores passed the baking oven safely. With appropriate temperature and time these organisms produced their toxins. Although the association was not causal, most likely *Staph. aureus* enterotoxins were the causative agent of that outbreak, za'atar fatayer served in the school canteen was the most probable implicated food. Contamination from food handlers and poor storage and transportation method are the most likely contributing factors.

A possible explanation to why only this school was affected and why sixth grade student in particular, may be that an infected bakery worker with toxogenic strain of *Staph. aureus* wrapped the za'atar fata'yer which was brought to this school, the last to receive the fata'yer, with a poorly air-conditioned truck after two and a half hours, and another 45 minutes in the poor environment of the school canteen, *Staph. aureus* produced their enterotoxins in the za'atar fata'yer which were mainly consumed by the sixth grade students who usually go to the break in one group and buy the food earlier than the younger students. Unfortunately, this explanation could not be proved.

Staphylococcal food intoxication usually follows ingestion of starchy food, meat, and poultry products. Other foods commonly involved are canned or potted meat or fish, pressed tongue, beef, cheese, other milk products, cream or custard filled pastries, potato salad, and pasta salads.[2,3] However, to confirm *Staph. Aureus,* the same phage type needs to be isolated from the stool or vomitus of two or more ill persons, or enterotoxin detected or 10^5 organisms/g isolated from the epidemiologically implicated food item, provided that the specimen is properly handled.[2,3]

In Saudi Arabia, the most common causative agent for FBDOs is *Staph. aureus* intoxication followed by *Salmonellas*. Contamination of food by food-handlers is the major contributing factor, followed by poor storage and non safe-source food.[5]

It was recommended to compose an internal inspection team at the school to supervise the canteen and the supplier using a special form to be sent weekly to the preventive office, correction of the school canteen environment, application of HACCP (Hazard Analysis Critical Control Point Evaluation) in the inspection of the food safety in the food industry rather than depending on the final product analysis. A laboratory-based and an epidemiologically-based surveillance system covering outbreaks, sporadic cases and monitoring food contamination is a requisite for effective control of FBD which requires knowledge about food borne hazards, the current level of FBD in the country and the

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The application of GIS to illustrate distribution of notifiable diseases in KSA, during the 1990s

Geographical Information Systems (GIS) are valuable in strengthening the whole process of epidemiological surveillance information management and analyses. GIS provides an excellent means of collecting, updating and managing epidemiological surveillance and related information. GIS provides visualization and analysis of epidemiological data, thus revealing trends, dependencies and interrelationships that would be more difficult to discover in other formats.[1,2]

This study was conducted to investigate the application of the Geographic Information System "GIS" to illustrate the geographical distribution of some of the notifiable diseases in the Kingdom of Saudi Arabia during the period from 1990 to 1999.

The source of data was a spatially referenced database for surveillance data of 15 notifiable diseases in Saudi Arabia for the period from 1990 to 1999; measles, mumps, diphtheria, chicken pox, whooping cough, Hepatitis A, B, C, Brucellosis, meningococcal meningitis, syphilis, Amoebic dysentery, tetanus and tetanus neonatorum. Spatial data is a coverage shape file for Saudi Arabia, scale 1:2,000,000 were provided from ministry of health, Saudi Arabia. The epidemiological geographic information system (EPI-GIS) for these diseases was established using the health mapper GIS software. We used a suitable indicator of the diseases investigated, which was the total number of reported cases yearly for all health regions, or we created a new indicator if this was not available. The pattern of spatial analysis used was point and area pattern. Digitized data from existing maps provided base layers (topography, land use, roads, rivers, surface water) on which other data could be overlaid. The distribution of cases was displayed as data locations through Health-Mapper using the command overlay indicator. Each layer was related to one year or sum of years according to that requested. A sequence of maps was produced comparing density of reported cases in all health regions in the kingdom during the 1990s. Dots in each health region on the maps mean presence of this number of cases in this health region but does not specify the real location of the cases in each health region. Maps were produced for the 15 notifiable diseases.

– Reported by: Dr. Mona A. Al-Anezi, Dr. Abdullah M. Al Rabeah (Field Epidemiology Training Program).

Editorial notes: This computer-based technology has been available for a number of years but it is only recently that it has been widely appreciated as a powerful new tool that supports health situation analysis, operations research, and surveillance for the prevention and control of health problems.

Health Geographic Information System (HGIS) has proven to be a potent tool for risk assessment, decision-making, intervention evaluation and health planning.[3] The use of this technology can be tailored to suit a wide range of applications. Some recent applications include vector-borne diseases, water-borne diseases and environmental health. One of the best examples is application of GIS in malaria control programs, which is worthwhile in many countries. In the Kingdom of Saudi Arabia, effort has been made to implement GIS in malaria control, particularly in malarious areas such as Jizan and Asir.

GIS was also very efficient when it was used for planning of Jeddah health care facilities. Murad applied GIS to analyze accessibility to hospitals in Jeddah, Saudi Arabia in 2001.[4] That application identified the parts of the city which require more attention regarding their health care supply. Identifying health care needs is one of the important tasks, which health authorities frequently do. Information technology in general and GIS in particular can help the health authorities in decision making.

GIS and remote sensing have been also used to study the transmission and outbreak of Rift Valley Fever (RVF) in Jizan region, Saudi Arabia. Geographical databases and disease epidemiology have been integrated into decision support system.

The present study demonstrates use of GIS and spatial analysis to 15 notifiable diseases, comparing the density of reported cases from all health regions over time every year or every two years, which provides quick and reliable information for discussion, planning, assessment, analysis and decision making.

Mapping of the incidence/prevalence of notifiable diseases over geographic areas is the basic application but this information was not available. Reported cases of notifiable diseases in the annual health report, Ministry of Health was therefore used. GIS could generate hundreds of maps and charts of the reported diseases and this study illustrates examples of them. Each layer represented data of one year, moving from one layer to another by activating layer or more reveal the aggregation or density of reported cases and what has changed during that period. Comparing maps of different years can provide excellent means of visualizing trends.

Quick response by activation of one layer or more was very informative when data was displayed. Comparing maps and charts by using GIS technology has provided immediate visualization of the density difference of reported cases between the health regions during 1990s and was extremely effective in understanding the data.

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ملخص باللغة العربية

الاستقصاء الوبائي لفاشية تسمم غذائي بين طلاب مدرسة ابتدائية بالدمام.

في يوم الثلاثاء الموافق ١٨ شعبان ١٤٢٤هـ نشرت الصحف المحلية خبر "إصابة أكثر من ٣٥ طالباً من طلاب مدرسة ابتدائية بإسكان الحرس الوطني بالدمام بأعراض مغص مفاجئ بعد تناولهم الوجبة التي تباع في مقصف المدرسة أثناء الفسحة و ذلك في اليوم السابق، مما دفع بإدارة المدرسة لتبليغ مستوصف الحرس الوطني الذي حضر للمدرسة و نقل ٢٦ طالباً مصاباً بأعراض التسمم الغذائي، منهم ١١ نقلوا إلى قسم الطوارئ بالمركز الصحي و ١٥ إلى قسم الطوارئ بالمستشفى".

وقام برنامج الوبائيات الحقلي بإرسال فريق بحث لعمل الاستقصاء الوبائي لهذه الفاشية وعمل زيارات ميدانية للشئون الصحية بالحرس الوطني، للمدرسة و لمتعهد الأطعمة.

وتبين أن بيئة المقصف بالمدرسة غير مقبولة صحياً وأخذ عينات من عامل المقصف للتحليل إضافة إلى عينات من سيارة نقل الأطعمة. كما جمعت عينات من الأطعمة و المشروبات من المقصف و أرسلت للتحليل الجرثومي و الكيميائي. وتمت زيارة المخابز التي تخبز الفطائر التي تباع بمقصف المدرسة وأخذت عينات للتحليل الجرثومي من عمال المخبز و من الفطائر المعدة .

وقد تم عمل دراسة وبائية ضابطة (Case Control Study)، حيث عرفت الحالة كأي طالب من طلاب مدرسة خالد بن الوليد الابتدائية بإسكان الحرس الوطني بالدمام أصيب بأعراض مغص في البطن أو قيئ أو غثيان أو إسهال بعد تناوله طعاماً أو شراباً من مقصف المدرسة في يوم الاثنين الموافق ١٧ شعبان ١٤٢٤هـ. وتم أخذ عينة عشوائية من الطلاب الغير مصابين بواقع طالب واحد (ضابط) لكل مصاب (حالة).

وقد بلغ إجمالي الطلاب التي شملتهم الدراسة، ١٣٤ طالب منهم ٦٧ مصاب (حالة) و ٦٧ غير مصاب (ضابطة). وقد راجع ٣٣ فقط من الحالات الخدمات الصحية بالحرس الوطني.

تراوحت أعمار المصابين بين ٦-١٤ سنة بمتوسط= ١١,٥ سنة و انحراف معياري= ١,٦٧ سنة. وأكثر الحالات ظهرت بين طلاب الصف السادس الابتدائي بنسبة ٦٨,٧%.

عانى ٦٢ من المصابين من مغص بالبطن وهو العرض الأكثر ظهوراً بنسبة ٩٢,٥% يليه كلا من الحرارة و الصداع و القيء ثم الغثيان و كان أقل الأعراض ظهوراً الإسهال بنسبة ١٦,٤%.

تراوحت فترة الحضانة بين ١٠ دقائق إلى ٨,٥ ساعة بمتوسط ٥٥ دقيقة.

تم حساب معدل الخطورة الأرجحي OR و معامل الثقة ٩٥% confidence interval (CI) لأصناف الطعام المتناولة، تبين أن لتناول فطائر الزعتر معدل خطورة أرجحي = ٣,٩ و معامل ثقة يتراوح بين ١,٩-٨,٠ ، كما تبين أن لشرب المياه المعدنية معدل خطورة أرجحي = ٨,٦ و معامل ثقة يتراوح بين ١,٩-٣٩,٥ ، لم تبين النتائج أي دلالات إحصائية مهمة لأصناف الطعام الأخرى.

كانت جميع عينات البراز التي جمعت من المصابين بالإضافة إلى عينة غسيل المعدة سلبية. وعينات الأطعمة التي جمعت من المقصف في اليوم التالي كانت سليمة كيميائياً و جرثومياً. كما كانت جميع التحاليل التي أجريت لعامل المقصف سلبية. بينما التحاليل التي عملت لعمال التغذية في المخبز ظهر بعضها إيجابي لجراثيم Staph. aureas وE-coli. والتحاليل التي أجريت على عينات الأطعمة من المخبز ظهر إيجابية بعضها أيضاً لجراثيم Staph. Aureas و E-coli.

يتضح من خلال الأعراض الأكلينيكية و فترة الحضانة القصيرة أن التسمم الغذائي قد حدث بسبب احتواء الطعام على سموم تفرزها بكتيريا الـ Staph. aureas في الطعام. هذه البكتيريا تموت بفعل الحرارة بعكس سمومها التي لا تتكسر بفعل الحرارة. كما أن فطائر الزعتر قد تكون هي الطعام المسبب للتسمم و ذلك للدلالة الإحصائية المرتفعة، لنتائج المختبر الإيجابية لعمال المخبز و لنتائج المختبر الإيجابية للفطائر المأخوذة من المخبز.

كما يبدو أن سلة الفطائر الملوثة بسموم البكتيريا قد بيعت معظمها إلى طلاب الصف السادس مما يفسر تمركز الإصابة بينهم. كما أن لطريقة نقل الطعام و حفظه - التي أغفلت فيه العلاقة بين الوقت الذي تعرض فيه الطعام لحرارة الجو و تكاثر البكتيريا - دوراً كبيراً في حدوث الفاشية.

تمت التوصية على تصحيح بيئة المقصف من خلال إنشاء لجنة مراقبة داخلية في المدرسة، تقوم بالإشراف على المقصف بشكل يومي من حيث النظافة وجودة الأطعمة المقدمة و مطابقتها للمتطلبات الصحية و ذلك حسب النموذج المعد لهذا الغرض، تنظيم دورات تدريبية للجان المراقبة الداخلية من قبل اللجنة الصحية في الحرس الوطني، التوعية الصحية و تثقيف متداولي التغذية و المراقبة المستمرة لعمال التغذية و توعيتهم بالطرق الصحيحة لحفظ و تداول الأطعمة، و التأكيد على نقل المواد الغذائية من المصدر إلى المستهلك بوسائل نقل مناسبة و مكيفة.

إعداد: د. علياء الناجي، د. رندة نوح (برنامج الوبائيات الحقلي).

تفشي التهاب ملتحمة العين الحاد في مدينة الجبيل الصناعية.

بتاريخ ١٤٢٤/٢/٢٤ هـ تلقينا ما يفيد بزيادة عدد حالات التهاب الملتحمة الحاد بشكل وبائي في مدينة الجبيل الصناعية التي تبعد عن مدينة الدمام بحوالي ١٠٠ كم.

وبمراجعة سجلات الحالات المبلغة للوزارة في الرياض و زيارة جميع مصادر البلاغات والتأكد من عدد الحالات ونظام التبليغ المتبع، فقد تقرر عمل دراسة وبائية ضابطة (Case Control Study) علماً بأنه لم يُبلغ عن أي زيادة في مستويات التلوث الجوي من دخان المصانع في فترة انتشار الوباء. وهدفنا من الدراسة، تقييم مدى تفشي الوباء، وتحديد العوامل التي ساعدت على زيادة عدد الحالات لإيجاد حلول عملية للحد من زيادة عدد الحالات وعدم تكرار التفشي الوبائي في المستقبل.

بلغ عدد الحالات المسجلة ١٩٨ حالة حتى ١٤٢٤/١٢/٧هـ جميعها كانت تعاني من احمرار بالعين يتبعها الم العين ثم تورم الجفون. ومعظم الحالات لطلاب المدارس وخصوصا الصفوف العليا الابتدائية والمتوسطة حيث بلغ عددهم ١٦٧ (٨٤ %) من إجمالي عدد الحالات. وبلغ عدد الحالات من الذكور ١٦٩ حالة (٨٥ %)، ومن الإناث ٢٩ حالة (١٥ %). وسجلت الحالات في ٢٥ مدرسة بنين وبنات في منطقة الجبيل الصناعية وكان ٦٢ % من الحالات في ثلاث مدارس متجاورة في حي الدفي حيث سجلت إحداها وهي مدرسة الخليج المتوسطة ٥٠ % من الحالات تقريبا وهي المدرسة التي يعتقد أن الحالة الأولى قد ظهرت فيها.

وقد أظهرت العلاقات الإحصائية بأن احتمالية العدوى بالمرض تكون أعلى في البيوت منها في المدارس وكذلك العدوى تزداد كلما زاد عدد أفراد الأسرة وكلما قل عدد غرف النوم في المنزل. مع وجود ارتفاع بفرص العدوى للإصابة بالمرض لدى الطلبة في الصفوف الدنيا وتقل كلما ازداد مستوى التعليم لديهم.

وتم التوصية بالاستمرار في الإجراءات الوقائية المتخذة من قبل قسم الصحة العامة بالهيئة الملكية للجبيل وعمل التحري الميداني لاكتشاف الحالات بشكل مبكر وعزل المصابين في البيت طول فترة انتقال العدوى وخصوصا طلبة المدارس مع الاهتمام بنظام المراقبة الوبائية وتوعية العاملين في القطاعات الصحية بأهميته وتدريبهم على عمل البلاغات في النماذج المخصصة وإرسالها للجهات المختصة في الوقت المحدد.

إعداد: د. فهد محمد السويدي، د.عبدالله بن محمد الربيعة (برنامج الوبائيات الحقلي).

Keratoconjunctivitis outbreak, in Al-Jubail 2003 contd .....

(Continued from page 2)

Crowds at schools seem to be an important risk factor for transmitting the disease, which is most probably a contagious viral infection, but this risk factor was not statistically significant. Among all risk factors were investigated in this study, low level of education appears to be the only significant risk factor that might have attributed to this outbreak.

It was recommended to intensify health education about the disease and its complications, modes of transmission and preventive measures, using all available methods from simple paper bulletins distributed to the targeted places (schools, eye clinics and optic shops), to bulletins through other media if possible; Active surveillance to detect the cases as early as possible; placing emphasis on the surveillance system and advising health workers with its importance and to train them on making communiqués in the allocated forms and sending them to the specialized authorities in the definite time.

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Food-borne disease outbreak in a boys primary school in Dammam, October 2003 G, contd .....

burden it places on the public health and the economy.

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Inside the Kingdom

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Selected notifiable diseases by region, Jan - Mar, 2004

	Riyadh	Makkah	Jeddah	Taif	Madinah	Qassim	Eastern	Hasa	Hafr AlBatin	Asir	Bisha	Tabuk	Hail	Al Shamal	Jazan	Najran	Baha	Al Jouf	Goriat	Gonfuda	Total
Measles	32	22	23	1	47	0	2	1	0	67	0	0	0	4	261	66	3	0	0	0	**529**
Mumps	24	19	63	14	10	19	10	15	7	7	1	1	2	1	0	3	1	1	0	0	**198**
Rubella	1	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Varicella	2455	647	2288	1299	614	1788	1376	2028	696	1925	1165	564	409	384	299	432	162	388	182	85	**19186**
Brucellosis	77	7	7	41	44	186	50	6	52	382	51	26	139	25	65	48	3	25	11	12	**1257**
Meningitis mening	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Meningitis other	52	17	6	14	24	14	1	16	1	1	1	3	4	0	6	4	3	0	0	0	**167**
Hepatitis A	38	52	22	14	6	53	19	12	96	117	58	20	27	23	46	61	12	7	7	20	**710**
Hepatitis B	299	5	233	75	25	68	179	11	1	75	17	85	3	9	14	8	0	39	15	18	**1179**
Hepatitis C	211	2	278	29	6	52	72	13	0	14	8	30	7	2	3	2	0	20	6	2	**757**
Hepatitis unspecified	23	1	17	8	0	0	1	0	0	47	0	32	0	0	164	37	0	0	0	0	**330**
Typhoid & praratyphoid	10	7	0	7	0	3	8	5	1	20	6	3	1	10	9	4	0	8	3	0	**105**
Amoebic dysentery	19	0	411	14	27	5	19	10	4	58	9	7	2	0	30	12	0	0	1	0	**628**
Shigellosis	61	0	10	0	0	5	17	9	0	0	0	2	1	0	9	7	0	1	1	0	**123**
Salmonellosis	109	2	36	6	1	2	105	18	13	12	15	9	0	0	3	4	0	15	7	1	**358**
Syphilis	3	0	18	0	0	2	25	8	0	2	4	0	0	1	2	1	0	3	8	0	**77**
VD, other	9	0	12	0	0	1	13	28	1	4	1	0	1	0	4	3	0	0	1	0	**78**

Comparisons of selected notifiable diseases, Jan - Mar, 2004

	Jan-Mar	Jan-Mar	Change	Jan-Mar	Jan-Dec		Jan-Mar	Jan-Mar	Change	Jan-Mar	Jan-Dec
DISEASE	**2004**	**2003**	**%**	**2004**	**2003**	**DISEASE**	**2004**	**2003**	**%**	**2004**	**2003**
Diphtheria	0	1	-100	0	2	**Meningitis other**	167	138	21	167	494
Pertussis	8	15	-47	8	120	**Hepatitis A**	710	605	17	710	2104
Tetanus neonat	17	7	143	17	31	**Hepatitis B**	1179	1150	3	1179	4329
Tetanus other	3	7	-57	3	12	**Hepatitis C**	757	651	16	757	2812
Poliomyelitis	0	0	0	0	0	**Hepatitis**	330	299	10	330	1101
Measles	529	240	120	529	1208	**Typhoid &**	105	82	28	105	403
Mumps	198	218	-9	198	749	**Amoebic**	628	699	-10	628	2328
Rubella	5	7	-29	5	22	**Shigellosis**	123	146	-16	123	490
Varicella	19186	19351	-1	19186	70884	**Salmonellosis**	358	355	1	358	2219
Brucellosis	1257	1094	15	1257	4534	**Syphilis**	77	31	148	77	382

Diseases of low frequency, Jan - Mar, 2004

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

Pertussis : 8 Cases (Eastern 3 , Hasa 2 , Asir 1, Hail 1, Najran 1)

Neonatal Tetanus :1 7 Cases (Makka1 3, Jeddah 2 , Jazan 2)

Ecchinoccocosis : 4 Cases (Hafr Al-Batin 2, Riyadh 1 , Qassim 1)

Guillian Barre Syndrome : 26 Cases (Riyadh 8, Madinah 2, Taif 2 , Jeddah 1, Asir 1, Makka 1 , Qassim 2, Jazan 4, Tabuk 1 , Eastern 2, Hafr Al-Batin 1, Baha 1)