

[Can J Cardiol.](#) 1997 Apr;13(4):391-4.

## **Reversible severe hereditary hemochromatotic cardiomyopathy.**

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Two cases of severe hereditary hemochromatotic cardiomyopathy are reported. Both patients responded remarkably well to treatment and are leading a normal life requiring no cardiac medications, following small volume phlebotomies for two years combined, in the first three and six months of treatment, with subcutaneous deferoxamine mesylate.

PMID: 9141972 [PubMed - indexed for MEDLINE]

[Infection](#). 1998 Sep-Oct;26(5):288-91.

## **Screening pregnant women for group B streptococcal colonization.**

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The recovery rates of group B streptococcus (GBS) from anorectal swabs (RS) and vaginal swabs (VS) that were enriched were compared to the routine method to determine the optimal procedure. Separate RS and VS were collected from women attending antenatal clinics. RS and VS were placed in 2 ml enrichment and selective broth. Swabs were inoculated onto colistin/nalidixic acid agar (CNA) upon arrival in the laboratory and onto 5% sheep blood agar (SBA) and CNA after 24 h enrichment. The routine method consisted of a VS sent in transport medium and inoculated in the laboratory onto SBA (no enrichment). The overall GBS colonization rate was 24% (64/264). Of the 64 GBS carriers, 77% were colonized in the vagina and 89% were colonized in the anorectum. The anorectum was the only site of colonization in 24% of the women, whereas the vagina was the only site of colonization in 11% of cases. Enrichment increased the detection of GBS from both RS (55 versus 42;  $P < 0.025$ ) and from VS (49 versus 27;  $P < 0.001$ ). Of the 64 cases, enriched RS detected 86%, enriched VS detected 77% and the standard VS detected only 41%. Enriched RS and enriched VS collectively detected 99% of cases. SBA was better than CNA for subculture of the enrichment broth because of a higher recovery rate (98-100% versus 80-82%;  $P < 0.01$ ) and the fact that the hemolysis on SBA made it easier to differentiate GBS from enterococci. The data confirm that optimal screening of pregnant women for GBS should include a combined RS/VS swab placed in enrichment broth that is then subcultured onto SBA after 24 h incubation.

PMID: 9795786 [PubMed - indexed for MEDLINE]

## **Enterococcal bacteremia in a tertiary care centre in Winnipeg**

**Madani TAA, Kabani A, Orr P, Nicolle L**

**OBJECTIVE:** To review experience with enterococcal bacteremia before the emergence of vancomycin-resistant enterococcus at a tertiary care teaching hospital.

**DESIGN:** Retrospective chart review of episodes of enterococcal bacteremia identified through the clinical microbiology laboratory from January 1990 to December 1994. Antimicrobial susceptibilities were performed for all isolates and pulsed-field gel electrophoresis for genetic typing of selected strains.

**RESULTS:** One hundred and twenty-six episodes of bacteremia were identified in 109 patients: 108 *Enterococcus faecalis*, 13 *Enterococcus faecium*, four both *E faecalis* and *E faecium*, and one *Enterococcus durans*. Enterococcal isolates occurred with polymicrobial bacteremia in 62 (49%) episodes. The most common sites of infection were central venous catheters (45%) and the urinary tract (21%).

Enterococcal bacteremia was usually nosocomially acquired (88%), and associated with older age, instrumentation, and prior or current antimicrobial therapy. Overall mortality was 22%, and 7.2% was partially or fully attributable to enterococcal bacteremia. Resistance to ampicillin, high level gentamicin and high level streptomycin were 0%, 32% and 31% for *E faecalis*, respectively, and 44%, 0% and 47% for *E faecium*, respectively.

**CONCLUSIONS:** During this review, the frequency and impact of enterococcal bacteremia at this institution was relatively limited. Isolates resistant to ampicillin and aminoglycosides were emerging, but differences in patient outcomes were similar for resistant and susceptible isolates.

[Infection](#). 2000 Nov-Dec;28(6):367-73.

## **Clinical infections and bloodstream isolates associated with fever in patients undergoing chemotherapy for acute myeloid leukemia.**

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**BACKGROUND:** Patients with acute myeloid leukemia (AML) are at high risk for infections. The aim of this study was to identify the sources of fever and the type of pathogens that cause bloodstream infection in patients with AML undergoing cytotoxic chemotherapy and antibiotic prophylaxis. **PATIENTS AND METHODS:** The source of fever and the type of pathogens causing bloodstream infection were identified for 129 febrile episodes experienced by 42 patients with AML receiving cytotoxic chemotherapy and antibiotic prophylaxis. **RESULTS:** A source of fever was identified in 81% of all febrile episodes. Mucositis (21.7%), pneumonia (13.2%), central venous catheter infection (12.4%), neutropenic enterocolitis (9.3%) and invasive fungal disease (9.3%) were the most common sources of fever. Of 16 central venous catheter infections, seven (43.8%) were not associated with local signs. 49 febrile episodes (37.9%) were associated with bloodstream infections, of which 14 (28.6%) were polymicrobial and seven (14.3%) had an undefined source of infection. Bloodstream infection was commonly associated with cellulitis (60%), mucositis (57.1%), central venous catheter infection (55.6%), neutropenic enterocolitis (41.7%) and invasive fungal disease (41.7%). Gram-positive microorganisms were the most common blood isolates (75.8%). Gram-negative bacteremic infections occurred in eight episodes (12.1%) experienced by patients who were not receiving ciprofloxacin prophylaxes at the time of bacteremia. Noninfectious sources of fever accounted for 23 (17.8%) of the 129 febrile episodes. **CONCLUSION:** Although the spectrum of pathogens that cause infection in this group of patients has shifted from gram-negative to gram-positive bacteria, the most common sources of infection remain the same as previously described and they mainly involve integumental surfaces.

PMID: 11139156 [PubMed - indexed for MEDLINE]

## **Methicillin-resistant *Staphylococcus aureus* in two tertiary-care centers in Jeddah, Saudi Arabia.**

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**OBJECTIVE:** To review clinical experience with methicillin-resistant *Staphylococcus aureus* (MRSA) in tertiary-care hospitals in Jeddah, Saudi Arabia. **DESIGN:** Retrospective review for the year 1998. **SETTING:** Two tertiary-care hospitals. **METHODS:** Results of MRSA-positive cultures of clinical specimens obtained as part of investigations for suspected infections were retrieved from the microbiology laboratories' records. Charts of patients were reviewed, with standardized data collection. **RESULTS:** Of 673 *S. aureus* isolates identified, 222 (33%, or 6.8 isolates/1,000 admissions) were MRSA. Overall MRSA prevalence was 2% in 1988. Nosocomial acquisition occurred in 84.2% of cases. All age groups were affected, and 52% of patients had at least one comorbidity. MRSA prevalence was highest in the intensive care units (26.6% of all isolates), the medical wards (24.8%), and the surgical wards (19.8%). Seventy-three percent of isolates caused infection; the rest represented colonization. Surgical wounds (35.2%), the chest (29%), and central venous catheters (13%) were the most common sites of infection. Bacteremia occurred in 15.4% of patients. Local signs (84%) and fever (75.9%) were the most common clinical manifestations. Respiratory distress and septic shock occurred in 30.2% and 13.6% of cases, respectively. Of 162 patients with MRSA infection and 60 patients with MRSA colonization, 95.7% and 70% received antibiotics in the preceding 6 weeks, respectively ( $P < .0001$ ). The total mortality of patients with MRSA infection was 53.7%: 36.4% as a result of MRSA infection and 17.3% as a result of other causes. **CONCLUSIONS:** The prevalence of MRSA is high and rapidly increasing in the two hospitals, as it is worldwide. Control measures to prevent the spread of MRSA in hospitals should continue, with reinforcement of hygienic precautions and development of policies to restrict the use of antibiotics.

PMID: 11379711 [PubMed - indexed for MEDLINE]

## **Clinical features of culture-proven *Mycoplasma pneumoniae* infections at King Abdulaziz University Hospital, Jeddah, Saudi Arabia.**

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**OBJECTIVE:** This retrospective chart review describes the epidemiology and clinical features of 40 patients with culture-proven *Mycoplasma pneumoniae* infections at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. **METHODS:** Patients with positive *M. pneumoniae* cultures from respiratory specimens from January 1997 through December 1998 were identified through the Microbiology records. Charts of patients were reviewed. **RESULTS:** 40 patients were identified, 33 (82.5%) of whom required admission. Most infections (92.5%) were community-acquired. The infection affected all age groups but was most common in infants (32.5%) and pre-school children (22.5%). It occurred year-round but was most common in the fall (35%) and spring (30%). More than three-quarters of patients (77.5%) had comorbidities. Twenty-four isolates (60%) were associated with pneumonia, 14 (35%) with upper respiratory tract infections, and 2 (5%) with bronchiolitis. Cough (82.5%), fever (75%), and malaise (58.8%) were the most common symptoms, and crepitations (60%), and wheezes (40%) were the most common signs. Most patients with pneumonia had crepitations (79.2%) but only 25% had bronchial breathing. Immunocompromised patients were more likely than non-immunocompromised patients to present with pneumonia (8/9 versus 16/31,  $P = 0.05$ ). Of the 24 patients with pneumonia, 14 (58.3%) had uneventful recovery, 4 (16.7%) recovered following some complications, 3 (12.5%) died because of *M pneumoniae* infection, and 3 (12.5%) died due to underlying comorbidities. The 3 patients who died of *M pneumoniae* pneumonia had other comorbidities. **CONCLUSION:** our results were similar to published data except for the finding that infections were more common in infants and preschool children and that the mortality rate of pneumonia in patients with comorbidities was high.

PMID: 11472636 [PubMed - indexed for MEDLINE]

PMCID: PMC35282

[Can J Infect Dis.](#) 2002 Mar;13(2):136-40.

## **Colonic tuberculosis clinically misdiagnosed as anorexia nervosa, and radiologically and histopathologically as Crohn's disease.**

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A case of colonic tuberculosis presenting with severe wasting was misdiagnosed as anorexia nervosa at another institution. Double contrast barium enema showed strictures, and ulcerations of the cecum and ascending colon with a skip area. The radiologist believed that these findings were due to Crohn's disease. Colonoscopic biopsies from the involved area revealed histopathological changes typical of Crohn's disease and not tuberculosis. The patient completely recovered with antituberculous therapy without steroids. The case demonstrated the clinical, radiological and histopathological difficulties and misdiagnoses that may be associated with the diagnosis of colonic tuberculosis.

PMID: 18159383 [PubMed - in process]

PMCID: PMC2094857

## **Epidemiology and clinical features of methicillin-resistant *Staphylococcus aureus* in the University Hospital, Jeddah, Saudi Arabia.**

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**OBJECTIVE:** To describe the prevalence, demography and clinical characteristics of patients who were colonized or infected with methicillin-resistant *Staphylococcus aureus* (MRSA) in 1998 at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. **PATIENTS AND METHODS:** Results of MRSA-positive cultures of clinical specimens obtained as part of investigations for suspected infections were retrieved from the King Abdulaziz University Hospital Infection Control Department's records. Charts of patients were reviewed. **RESULTS:** Of 292 *S aureus* isolates identified, 111 (38%) were MRSA, or 6.0 MRSA isolates/1000 admissions, which represented a marked increase over MRSA prevalence in 1988 (less than 2%). Nosocomial acquisition occurred in 74.8% of isolates. All age groups were affected, but 45.9% of patients were in the 'extremes of age' group (younger than one or older than 60 years of age). The prevalence was highest in the medical ward (27%), followed by the paediatrics combined medical and surgical ward (20.7%), the outpatient department (18%), the adult surgical ward (17.1%) and the intensive care units (17.1%). Two-thirds (66.7%) of cases represented infection and the remainder represented colonization. Surgical wounds (31.1%), the chest (27%) and endovascular catheters (20.3%) were the most common sites of infection. Bacteremia occurred in 27% of patients. Local signs (68.9%) and fever (60.8%) were the most common clinical manifestations. Respiratory distress and septic shock occurred in 28.4% and 6.8% of cases, respectively. Of 74 patients with MRSA infection and 37 patients with MRSA colonization, 91.9% and 56.8% received antibiotics in the preceding six weeks, respectively ( $P < 0.0001$ ). The total mortality of patients with MRSA infection was 60.8%; 37.8% of deaths were the result of MRSA infection and 23% were the result of other diseases. **CONCLUSIONS:** The prevalence of MRSA is high and rapidly increasing at King Abdulaziz University Hospital, as it is worldwide. Control measures to prevent the spread of MRSA in hospitals should continue with reinforcement of hygienic precautions and development of policies to restrict the use of antibiotics.

PMID: 18159397 [PubMed - in process]

PMCID: PMC2094880



## **The natural history of hepatitis C virus infection.**

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Chronic hepatitis C virus (HCV) infection is a major health problem worldwide. The natural history of HCV infection is not fully understood. For years, there has been an overestimation of the rate of chronicity in acute HCV. Similar high rates of progression to cirrhosis in chronic HCV were reported. The source of confusion stems from the fact that most acute HCV infections are asymptomatic and never come to medical attention. The consequence of this is that most early studies of natural history reflect the more severe end of the spectrum of the disease. Recent studies reported 43-45% rate of chronicity as opposed to the old rates of 77-85%. Also, the rate of progression to cirrhosis and hepatocellular carcinoma was found to be much lower than previously reported. Multiple factors contribute to the chronicity and progression to cirrhosis, the most important being male gender, age, alcohol intake, and the degree of liver fibrosis on initial biopsy. At least 38% of patients with HCV will manifest symptoms of at least one extrahepatic complication. The most important extrahepatic manifestation is mixed cryoglobulinemia. Other extrahepatic manifestations and their response to antiviral therapy are discussed.

PMID: 12897903 [PubMed - indexed for MEDLINE]

[Clin Infect Dis.](#) 2003 Oct 15;37(8):1084-92. Epub 2003 Sep 23.

## **Rift Valley fever epidemic in Saudi Arabia: epidemiological, clinical, and laboratory characteristics.**

[Madani TA](#), [Al-Mazrou YY](#), [Al-Jeffri MH](#), [Mishkhas AA](#), [Al-Rabeah AM](#), [Turkistani AM](#), [Al-Sayed MO](#), [Abodahish AA](#), [Khan AS](#), [Ksiazek TG](#), [Shobokshi O](#).

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This cohort descriptive study summarizes the epidemiological, clinical, and laboratory characteristics of the Rift Valley fever (RVF) epidemic that occurred in Saudi Arabia from 26 August 2000 through 22 September 2001. A total of 886 cases were reported. Of 834 reported cases for which laboratory results were available, 81.9% were laboratory confirmed, of which 51.1% were positive for only RVF immunoglobulin M, 35.7% were positive for only RVF antigen, and 13.2% were positive for both. The mean age (+/- standard deviation) was 46.9+/-19.4 years, and the ratio of male to female patients was 4:1. Clinical and laboratory features included fever (92.6% of patients), nausea (59.4%), vomiting (52.6%), abdominal pain (38.0%), diarrhea (22.1%), jaundice (18.1%), neurological manifestations (17.1%), hemorrhagic manifestations (7.1%), vision loss or scotomas (1.5%), elevated liver enzyme levels (98%), elevated lactate dehydrogenase level (60.2%), thrombocytopenia (38.4%), leukopenia (39.7%), renal impairment or failure (27.8%), elevated creatine kinase level (27.3%), and severe anemia (15.1%). The mortality rate was 13.9%. Bleeding, neurological manifestations, and jaundice were independently associated with a high mortality rate. Patients with leukopenia had significantly a lower mortality rate than did those with a normal or high leukocyte count (2.3% vs. 27.9%; odds ratio, 0.09; 95% confidence interval, 0.01-0.63).

PMID: 14523773 [PubMed - indexed for MEDLINE]

[Am J Infect Control](#). 2004 Apr;32(2):120-1.

## **Preventive strategies to keep Saudi Arabia SARS-free.**

[Madani TA](#).

PMID: 15088602 [PubMed - indexed for MEDLINE]

## **Epidemiology of the human immunodeficiency virus in Saudi Arabia; 18-year surveillance results and prevention from an Islamic perspective.**

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**BACKGROUND:** data on HIV epidemiology and preventive measures in Islamic countries is limited. This study describes the results of 18-year of HIV surveillance in Saudi Arabia (SA) and the preventive measures implemented from an Islamic perspective. **METHODS:** surveillance for HIV has been underway in SA since 1984. Indications for HIV testing include clinical suspicion, screening of contacts of HIV-infected patients, and routine screening of blood and organ donors, prisoners, intravenous drug users, patients with other sexually transmitted infections, and expatriates pre-employment. This is a case series descriptive study of all confirmed HIV infections diagnosed in SA from 1984 through 2001. **RESULTS:** a total of 6046 HIV infections were diagnosed, of which 1285 (21.3%) cases were Saudi citizens. Over the 18-year surveillance period the number of HIV infections diagnosed annually among Saudi citizens gradually increased and, over the period 1997-2001, it reached to 84 to 142 cases per year. The number of cases per 100,000 population varied widely between regions with a maximum of 74 cases and a minimum of 2 cases. The infection was most common in the age group 20-40 years (74.6%) and predominantly affected men (71.6%). The modes of transmission among Saudi citizens and expatriates, respectively, were as follows: heterosexual contact, 487 (37.9%) and 1352 (28.4%) cases; blood transfusion, 322 (25.0%) and 186 (3.9%) cases; perinatal transmission, 83 (6.5%) and 19 (0.4%) cases; homosexual contact, 32 (2.5%) and 38 (0.8%) cases; intravenous drug use, 17 (1.3%) and 33 (0.7%) cases; bisexual contact, 10 (0.8%) and 14 (0.3%) cases; unknown, 334 (26.0%) and 3119 (65.5%) cases. The number of HIV infections transmitted by blood or blood products transfusion declined to zero by year 2001 and all such infections occurred due to transfusions administered before 1986. At HIV diagnosis, 4502/6046 (74.5%) patients had no symptoms, 787 (13.0%) patients had non-AIDS defining manifestations, and 757 (12.5%) patients had AIDS. A total of 514/1285 (40%) Saudi patients died by year 2001. **CONCLUSIONS:** the number of HIV cases in SA is limited with heterosexual contact being the main mode of transmission. From an Islamic perspective, preventive strategies include prevention of non-marital sex and intravenous drug use with encouragement of "safe sex" through legal marriage.

PMID: 15298719 [PubMed - indexed for MEDLINE]

PMCID: PMC514607

## **Alkhumra virus infection, a new viral hemorrhagic fever in Saudi Arabia.**

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**OBJECTIVES:** Four patients with typical acute viral hemorrhagic fever were identified in the holy city of Makkah, Saudi Arabia, between 8 and 23 February 2001, the Hajj (pilgrimage) period of that year. Tests for Rift Valley fever (RVF), Crimean-Congo hemorrhagic fever (CCHF), and dengue were negative. Blood specimens were sent to the Centres for Disease Control and Prevention (CDC), Atlanta for viral culture and testing for other hemorrhagic fever viruses. A new flavivirus closely related to the tick-borne Kyasanur forest disease virus was isolated. This new flavivirus was originally isolated in 1995 from 6 patients with dengue-like hemorrhagic fever from Alkhumra district, south of Jeddah, Saudi Arabia.

**METHODS:** A case definition was formulated for surveillance of this new disease in Saudi Arabia. Blood specimens were collected from all patients with suspect 'Alkhumra' virus (ALKV) infection and tested for ALKV, RVF, CCHF, dengue, and West Nile encephalitis. Patients data were prospectively collected on standardized data collection forms. **RESULTS:** From 8 February 2001 through 9 February 2003, a total of 37 cases were identified in Makkah, 20 of them were laboratory confirmed. Acute febrile flu-like illness with hepatitis (100%), hemorrhagic manifestations (55%), and encephalitis (20%) were the main clinical features. The case fatality was 25%. The disease seemed to be transmitted from sheep or goat to humans by the mosquito bites or direct contact with these animals. **CONCLUSIONS:** ALKV infection is a novel serious zoonotic hemorrhagic fever virus discovered in Saudi Arabia. The role of arthropods such as ticks and mosquitoes, and animals such as sheep, goat, and rodents in the transmission and maintenance of the virus remains to be elucidated.

PMID: 16038757 [PubMed - indexed for MEDLINE]

## **Sexually transmitted infections in Saudi Arabia.**

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**BACKGROUND:** Data on sexually transmitted infections (STIs) in Saudi Arabia (SA) and other Islamic countries are limited. This study describes the results of a five-year surveillance for STIs in SA. **METHODS:** This is a case series descriptive study of all confirmed STIs diagnosed in SA from January, 1995 through December, 1999. **RESULTS:** A total of 39049 STIs were reported to the Ministry of Health. Reported STIs included nongonococcal urethritis (14557 infections, 37.3%), trichomoniasis (10967 infections, 28.1%), gonococcal urethritis (5547 infections, 14.2%), syphilis (3385 infections, 8.7%), human immunodeficiency virus (2917 infections, 7.5%), genital warts (1382, 3.5%), genital herpes (216 infections, 0.6%), and chancroid (78 infections, 0.2%). The average annual incidence of STIs per 100,000 population for Saudis and non-Saudis, respectively, was as follows: 14.8 and 7.5 for nongonococcal urethritis, 9.4 and 10.4 for trichomoniasis, 5.2 and 4.2 for gonorrhoea, 1.7 and 6.4 for syphilis, 0.6 and 8.0 for HIV, 1.4 and 0.7 for genital warts, 0.1 and 0.4 for genital herpes, and 0.1 and 0.1 for chancroid. The incidence of STIs was somewhat steady over the surveillance period except for nongonococcal urethritis which gradually increased. **CONCLUSION:** Nongonococcal urethritis, trichomoniasis, and gonococcal urethritis were the most commonly reported STIs in SA. Even though the incidence of STIs in SA is limited, appropriate preventive strategies that conform to the Islamic rules and values are essential and should be of highest priority for policymakers because of the potential of such infections to spread particularly among the youth.

PMID: 16403220 [PubMed - indexed for MEDLINE]

PMCID: PMC1368987

## **Trend in incidence of hepatitis B virus infection during a decade of universal childhood hepatitis B vaccination in Saudi Arabia.**

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Since 1990, the national strategy to eliminate hepatitis B virus (HBV) infection in Saudi Arabia has included universal administration of HBV vaccine to all infants. From 1990 to 1995 this vaccine was also routinely administered to children at school entry. The prevalence of hepatitis B surface antigen (HBsAg) among children before this programme was reported to be 6.7%. The objective of this study was to describe the trend in incidence of HBV infection over a decade of surveillance following the introduction of this programme. From January 1990 to December 1999 a total of 30,784 cases of HBV infection (positive for HBsAg) were reported. The total number of HBV infections among children <15 years of age was 4180 cases, with a prevalence of 0.05%. The total number of HBV infections among adults was 26,604 cases, with a prevalence of 0.22%. The prevalence varied by region, ranging from 0.03% to 0.72% with a mean prevalence of 0.15%. There was a clear decline in incidence among children whereas the incidence in adults slightly rose, perhaps owing to population growth estimated to be 3.3% annually. This study showed that the universal childhood HBV vaccination programme had an enormous positive impact on HBsAg seroprevalence among children in Saudi Arabia.

PMID: 16600318 [PubMed - indexed for MEDLINE]

## **Handwashing and gloving practice among health care workers in medical and surgical wards in a tertiary care centre in Riyadh, Saudi Arabia.**

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We evaluated the adherence to handwashing and gloving practice among health care workers (HCWs) in 5 medical and 5 surgical wards of a 1250-bed hospital in Riyadh. Nurses, consultants, residents, interns, and medical students attending these wards were each unobtrusively observed for handwashing and gloving practice. Each HCW was observed only once for all handwashing and gloving opportunities during a single patient encounter. 312 handwashing opportunities for 230 HCWs were observed. The study population comprised 110 nurses, 76 residents, 23 medical students, 11 interns, and 10 consultants. Female subjects constituted 56.1% of the population. The ratio of handwashing sinks to beds was 1:6-7. The overall frequency of handwashing was 6.7% before patient contact and 23.7% after patient contact. Adherence to handwashing was 70.0% among medical students, 69.2% among interns, 18.8% among nurses, 12.5% among residents, and 9.1% among consultants. The duration of handwashing was suboptimal for all HCWs (average of 4.7 s). Adherence to wearing gloves for performing procedures was on average 75.5%. Poor adherence to handwashing is a worldwide problem. Strategies to improve hand hygiene practice should be multifaceted and should include increasing the availability and accessibility of handwashing sinks and alcohol-based hand rubs.

PMID: 16857605 [PubMed - indexed for MEDLINE]



[Ann Saudi Med.](#) 2006 Jul-Aug;26(4):321-4.

## **A child with an acanthocephalan infection.**

[Sahar MM](#), [Madani TA](#), [Al Mohsen IZ](#), [Almodovar EL](#).

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PMID: 16885634 [PubMed - indexed for MEDLINE]

## **Steady improvement of infection control services in six community hospitals in Makkah following annual audits during Hajj for four consecutive years.**

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**BACKGROUND:** The objective of this study was to evaluate the impact of annual review of the infection control practice in all Ministry of Health hospitals in the holy city of Makkah, Saudi Arabia, during the Hajj period of four lunar Islamic years, 1423 to 1426 corresponding to 2003 to 2006. **METHODS:** Audit of infection control service was conducted annually over a 10-day period in six community hospitals with bed capacities ranging from 140 to 557 beds. Data were collected on standardized checklists on various infection control service items during surprise visits to the medical, pediatric, surgical, and critical care units, and the kitchens. Percentage scores were calculated for audited items. The results of the audit for hospitals were confidentially sent to them within four weeks after the end of Hajj. **RESULTS:** Deficiencies observed in the first audit included lack of infection control committees, infection control units, infection control educational activities, and surveillance system and shortage of staff. These deficiencies were resolved in the subsequent audits. The average (range) scores of hospitals in 11 infection control items increased from 43% (20-67%) in the first audit to 78% (61-93%) in the fourth audit. **CONCLUSION:** Regular hospital infection control audits lead to significant improvement of infection control practice. There is a need to build a rigorous infection control audit into hospitals' ongoing monitoring and reporting to the Ministry of Health and to provide these hospitals with feed back on such audits to continuously strengthen the safety standards for patients, visitors, and employees.

PMID: 16934152 [PubMed - indexed for MEDLINE]

PMCID: PMC1590039

## **Causes of hospitalization of pilgrims in the Hajj season of the Islamic year 1423 (2003).**

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**BACKGROUND:** Approximately 2 to 3 million pilgrims perform Hajj every year. Planning for health care requires knowledge of the pattern of diseases, complications, and outcome of pilgrims who require hospitalization during the Hajj period. **METHODS:** In a cross-sectional study we compiled data on all patients admitted to 1487 beds in four hospitals in Mena (793 beds) and three hospitals in Arafat (694 beds) from the seventh to the thirteenth day of the Hajj season of the Islamic year 1423, corresponding to 8 to 14 February 2003. **RESULTS:** Of 808 patients hospitalized, most (79%) were older than 40 years. There was no sex preponderance. A total of 575 (71.2%) patients were admitted to medical wards, 105 (13.0%) to surgical wards, and 76 (9.4%) to intensive care units. Most patients (84.8%) had one acute medical problem. Pneumonia (19.7%), ischemic heart disease (12.3%), and trauma (9.4%) were the most common admitting diagnoses. More than one third (39%) had co-morbid conditions. A total of 644 (79.7%) patients were discharged from the hospital in stable condition to continue therapy in their residential camps, 140 (17.3%) were transferred to other hospitals in Makkah for specialized services or further care, 19 (2.3%) were discharged against medical advice, and 5 (0.7%) patients died. **CONCLUSION:** This study provided information on the most common causes of hospitalization, pattern of diseases, and required medical services for pilgrims in Hajj. It is hoped that this data will be of help to health sector planners and officials to provide optimal and cost-effective health care services to pilgrims in Hajj.

PMID: 17019102 [PubMed - indexed for MEDLINE]

## **Causes of admission to intensive care units in the Hajj period of the Islamic year 1424 (2004).**

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**BACKGROUND:** Approximately 2 to 3 million pilgrims perform Hajj every year. We describe the pattern of diseases, complications, and outcome of pilgrims who required admission to intensive care units (ICUs) during the Hajj period of the Islamic year 1424 (2004). **METHODS:** This was a cross-sectional study of all patients admitted to 104 ICU beds in four hospitals in Mena and three hospitals in Arafat during the Hajj. **RESULTS:** Of 140 patients admitted to ICUs, 75 (54%) patients were older than 60 years. The risk of complications and death increased with age, with the highest risk noticed among pilgrims older than 80 years. Ninety-four (67.6%) patients were men. Eighty-nine (63.6%) patients were admitted with cardiovascular diseases and 37 (26.4%) patients with infections. Myocardial infarction (25%) and pneumonia (22%) were the most common admitting diagnoses. Trauma accounted for only 6.4% (9 patients) of admissions. Sixty-three (45.0%) patients recovered and were discharged or transferred to hospital wards in stable condition, 40 (28.6%) were transferred to tertiary care centers for specialized services, 21 (15.0%) were transferred to tertiary care centers after closure of the temporary hospitals in Mena and Arafat, 15 (10.7%) patients died, and one (0.7%) patient was discharged against medical advice. **CONCLUSION:** This study revealed information on the pattern of diseases and the most common causes of admission of pilgrims to ICUs and the required medical services during Hajj. It is hoped that this information will be of help to health care planners and officials to provide optimal and cost effective health care services to pilgrims in Hajj.

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## **Meningococcal, influenza virus, and hepatitis B virus vaccination coverage level among health care workers in Hajj.**

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**BACKGROUND:** The objective of this study was to assess the compliance of health care workers (HCWs) employed in Hajj in receiving the meningococcal, influenza, and hepatitis B vaccines. **METHODS:** A cross-sectional survey of doctors and nurses working in all Mena and Arafat hospitals and primary health care centers who attended Hajj-medicine training programs immediately before the beginning of Hajj of the lunar Islamic year 1423 (2003) using self-administered structured questionnaire which included demographic data and data on vaccination history. **RESULTS:** A total of 392 HCWs were studied including 215 (54.8%) nurses and 177 (45.2%) doctors. One hundred and sixty four (41.8%) HCWs were from Makkah and the rest were recruited from other regions in Saudi Arabia. Three hundred and twenty three (82.4%) HCWs received the quadrivalent (ACYW135) meningococcal meningitis vaccine with 271 (83.9%) HCWs receiving it at least 2 weeks before coming to Hajj, whereas the remaining 52 (16.1%) HCWs received it within < 2 weeks. Only 23 (5.9%) HCWs received the current year's influenza virus vaccine. Two hundred and sixty (66.3%) of HCWs received the three-dose hepatitis B vaccine series, 19.3% received one or two doses, and 14.3% did not receive any dose. There was no statistically significant difference in compliance with the three vaccines between doctors and nurses. **CONCLUSION:** The meningococcal and hepatitis B vaccination coverage level among HCWs in Hajj was suboptimal and the influenza vaccination level was notably low. Strategies to improve vaccination coverage among HCWs should be adopted by all health care facilities in Saudi Arabia.

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## **Assessment of infection control knowledge, attitude and practice among healthcare workers during the Hajj period of the Islamic year 1423 (2003).**

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We assessed hospital infection control knowledge, attitude, and practice (KAP) of healthcare workers (HCWs) during the Hajj season of the Islamic y 1423 (2003). A self-administered structured questionnaire was used to collect the data. A total of 392 HCWs was studied, of whom 215 (54.8%) were nurses and 177 (45.2%) were doctors. 315 (80.4%) HCWs worked in hospitals, whereas 77 (19.6%) worked in primary healthcare centres. Of the 392 HCWs, 164 (41.8%) were from Makkah, and the remaining 228 (58.2%) were recruited from other regions in Saudi Arabia. A good proportion (81.8%) of HCWs correctly answered at least 5 of the 11 knowledge statements. However, obvious deficiency of knowledge appeared concerning other important hospital infection control measures. A smaller proportion (61.9%) of HCWs achieved a score of at least 4 out of 7 for attitude statements with unacceptable attitude for the remaining 3 areas. Response to questions concerning practice showed that nurses tended to be better than doctors (p-value=0.204), but both groups reported variable compliance to hospital infection control practices in terms of strict or near-strict adherence. In conclusion, training of HCWs is needed to improve KAP in infection control.

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## **Chronic granulomatous disease with recurrent hepatic abscesses in an adult.**

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Chronic granulomatous disease CGD is a condition of inability to deal with bacterial and fungal infections, due to defective respiratory burst in neutrophils leading to recurrent cutaneous and visceral infections. Usually a disease of childhood, but patients nowadays survive to adulthood, and diagnosis might be difficult if not considered. We describe a 20-year-old female with previously undiagnosed CGD, presenting with recurrent cutaneous and hepatic abscesses.

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## **Hepatitis C virus infections reported over 11 years of surveillance in Saudi Arabia**

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This was a case series descriptive study of all subjects reported to the Ministry of Health in Saudi Arabia from January 1995 to December 2005 as having hepatitis C virus (HCV) infection, diagnosed by detection of antibodies to HCV. A total of 24 948 cases were reported, of whom 19 185 (76.9%) cases were Saudis. The number of HCV infections by region ranged from 16 to 322 cases, with a mean of 124 cases per 100 000 population, or 0.124%. The number of cases reported among children <15 years was 998 cases (12 cases per 100 000 pediatric population, or 0.012%), and that among adults was 23 950 cases (202 cases per 100 000 adult population, or 0.202%). There was a slight steady increase in the annually reported infections from 1995 to 2002, followed by a plateau. The lower number of HCV infections reported in children compared with those reported in adults suggested that perinatal and childhood transmission was not a major mode of infection and that other modes of transmission, such as unscreened blood transfusion before 1990 and intravenous drug use, were likely to be the main modes of infection. The study was limited by being a passive reporting of cases and not a cross-sectional survey.

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