

O2 - Comunicación Oral/Oral communication

Enfermedades infecciosas

Communicable diseases

Jueves 2 de Octubre / Thursday 2, October
9:00:00 a/to 11:00:00

Moderador/Chairperson:
Karoline Fernández de la Hoz Zeitler

INFECTIONS IN CRITICALLY ILL PATIENTS HOSPITALIZED IN AND OUT OF INTENSIVE CARE UNITS

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Background: In Israel, similar to most European countries, the demand for the ICU beds far exceeds their availability. This means that many critically ill patients occupy hospital beds outside intensive care units and throughout the hospital. These patients are at greater risk for acquiring hospital infections due to the severity of their illness and the numerous invasive procedures they are exposed to.

Objective: To compare the risk of hospital infection among similar patients admitted to ICUs vs. those admitted to regular hospital departments.

Design & Methods: In collaboration with the attending staff of 5 acute care Israeli hospitals, a team including an intensivist visited every hospital ward on 4 selected annual days. They identified all critically ill adult patients who fitted a priori developed study criteria. Patients' records were reviewed for the development of new infections. Infection rates in and out of ICU were compared from the day a patient first met study criteria till 30 consecutive days. Kaplan-Meier curves were used to examine the pattern of appearance of new infections and Cox multivariate models were used to adjust comparisons between ICU vs. regular departments for the severity of illness and intensity of treatment (TISS).

Results: The proportion of critically ill among all adult hospitalized patients was 5.5% (736/13,415). Only 27% of these were admitted to ICU, an additional 24% to other specialized care units and 49% were treated in regular hospitals wards. Admission to ICU was associated with better survival during the first days after first fitting study criteria ($p=0.005$). Beyond the first 3 days there was no evidence of further survival advantage for ICU patients. Of the 699 patients for whom infection data was available, 321 patients (45.9%) acquired a new hospital infection. The risk of new infection was unaffected by prior active infection present at the day fitting the study criteria. The most common new infection was UTI (25.3%), followed by blood stream infection (BSI) (18.0%), pneumonia (15.0%), surgical wound infection (SWI) (7.4%) and other infection (6.0%). The adjusted hazard of acquiring a new infection among ICU patients was twice that of regular wards ($P<0.001$). TISS, age > 80, trauma and coma were found to be independently associated with a higher risk of new hospital infection.

Conclusion: This first direct comparison of critically ill patients hospitalized in ICU and regular wards indicated a higher risk of infection among ICU patients relative to regular wards even after controlling to intensity of treatment and severity of illness. Increased efforts should be directed at reducing infection rates among ICU patients, possibly by earlier discharge to intermediate care units.

012

013

AN OUTBREAK OF LEGIONELLA PNEUMOPHILA IN MARTOS (JAEN, SPAIN)

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Background: The outbreaks due to Legionella are increasing in western countries. Several reasons are argued to justify the increasing number of cases: more intelligent buildings, widespread use of air-conditioning and refrigerating towers, increased surveillance, etc. The objective of this report is to describe an outbreak occurring in the city of Martos (Jaén, southern Spain).

Methods: The city of Martos has 22,688 inhabitants and is placed in a valley between two mountains. The outbreak began on 5th October 2002 and ended on 12th November 2002. The research was based on a clear case definition (by detecting Legionella antigen in urine and respiratory samples) and an active case-finding. A search for Legionella in the environment according to Spanish law RD 909/2001 was performed. A matched case-control study was carried out to identify the determinants for acquiring the disease. Controls were matched in a 3:1 relation by age (± 5 years) and sex. Crude and multivariable-adjusted for odds ratios (ORs) and their 95% confidence intervals were estimated using conditional regression analysis. A geographical analysis was also done with the position of refrigerating towers, and positions of both cases and controls.

Results: A total of 8 cases was identified, the index case occurred on 5th October and the last one on 12th November. The average age was 59.4 years (standard deviation 18.0). The most usual clinical presentation was pneumonia, 43% of cases were smokers and 71% had an underlying disease. In crude analyses, no exposure-related variable achieved statistical significance ($p < 0.05$); however, in people working daily in the industrial area of the city (clearly delimited) the multivariable OR was 19.7 (95% CI = 0.8-536), p for trend = 0.065. People visiting the public park (adjacent to the industrial area and placed along the direction of predominant winds) achieved an adjusted OR = 15.3 (95% CI = 1.0-232). In two clinical samples the same strain was isolated, Legionella pneumophila serogroup 1 subtype Pontiac (Knoxville). This strain was not isolated in the environmental samples (different strains were isolated). After the index case all the refrigerating towers were stopped, cleaned and disinfected. The outbreak ended by mid November.

Conclusions: The (fortunate) small number of cases hinders obtaining statistical significance with working in the industrial area. Anyway, the high OR figures allow to suggest that proximity to the public park and industrial area (and its refrigerating towers) were responsible for the outbreak. The quick public health intervention also contributed to the early stopping of the outbreak.

015

FIVE YEARS FOLLOW UP FOR HUMAN PAPILLOMA VIRUS GENITAL INFECTIONS IN A COHORT OF WOMEN FROM THE GENERAL POPULATION IN BARCELONA, SPAIN

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Background: Human papilloma virus (HPV) prevalence by age in the Spanish general population is largely unknown. The aims of the study presented are: 1) To estimate the age-related profile of prevalent, incident and persistent HPV genital infection and 2) to explore the socio-demographic and behavioural characteristics associated to HPV infection. **Methods:** Women (N=1127) were randomly selected from the general population during 1998-99. The sample was drawn from census list and stratified in 11 five-years age-group. Women underwent a structured questionnaire and provided exfoliated cervical cells to perform a standard Pap test and HPV DNA detection. HPV was detected by means of Hybrid Capture II. A five year follow-up of originally included women started in October 2002. Women are being contacted by mail and telephone. Women undergo structured questionnaire and provide other exfoliated cervical cells to perform Papanicolaou test (PAP) and HPV DNA detection.

Results: The age adjusted HPV prevalence at recruitment five years ago was 3.4%. Higher HPV prevalence was observed among young women, born overseas, reporting more than 5 sexual partners and having a husband having had sexual contacts with prostitutes while regular use of condoms was related to lower HPV prevalence. Follow-up recruitment is ongoing. Out of 492 already contacted women, 173 (35.2%) have accepted to participate and have been interviewed. Initial refusal rate is 9.2% and lost contact 6.1%. Appointments are being arranged for the remaining subjects. Among the women with follow-up information one woman has a diagnosis of cervical intraepithelial lesion grade I (CIN I) and five women have a diagnosis of atypical squamous intraepithelial lesions (ASCUS). The remaining 126 women have a normal PAP. Among the women with a normal Pap. 38 (30.1%) had had an inflammatory Pap 5 years before, 1 had a ASCUS and 1 CIN grade II. Updated information will be presented. Twelve women have acquired new HPV DNA infections not detected in the previous visit, 149 women are persistently negative and 3 original positive have resolved the infection. Updated information will be presented.

Conclusions: Prevalence of HPV infection in Spain is relatively low among health care users compared to other European populations of similar ages using the same HPV assay. Follow up of these women will contribute to understand the association between age and HPV infections. Preliminary data at follow up corroborate the low prevalence of cervical lesions and of HPV genital infection. Follow-up of the general population is difficult and requires an important investment of health care providers.

014

PREVALENCE AND RISK FACTORS FOR HIGH RISK HUMAN PAPILLOMAVIRUS INFECTION IN MIGRANT FEMALE SEX WORKERS IN MADRID

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Objectives: To estimate the prevalence of high risk Human Papillomavirus (HPV) infection and identify risk factors for it in migrant female sex workers (MFSW).

Methods: Cross-sectional study of MFSW attending a Sexually Transmitted Infections (STIs) Clinic in Madrid during 2001-2002. Information on sociodemographic characteristics, reproductive and sexual health, smoking habits, time in commercial sex work, history of STIs, HIV, Hepatitis B, Hepatitis C, syphilis and/or genitourinary infections was collected. High risk HPV Infection was determined through Digene HPV Test, Hybrid Capture II. Multiple logistic regression modelling was used to study the relationships between HPV infection and the explanatory variables checking for confounding and interaction.

Results: Of 734 women; 397 (54%) were from Colombia, 158 (22%) from Ecuador, 24 from Africa, 18 from Eastern Europe, 70 from the Caribbean and 67 from other countries. Overall HPV prevalence was 39% with statistically significant differences by age ($p < 0.005$); 49% in under 20 years, 35% in 21-25 years, 14% in over 36 years. In univariate analyses, statistically significant associations were found for area of origin, age, marital status, use of oral contraceptive pill (OCP), smoking and pregnancy. In multivariate analyses, only area of origin, smoking, using OCP, age and an interaction between these last two variables remained in the model. In women under 25 years, the risk of HPV was twice than in women over 25 (OR 2.3 95%CI: 1.7-3.2), the OR for use of OCP was 10.3 (95% CI 1.1-92.4), smoking was protective (OR 0.3 95% CI: 0.2-0.7). In women over 25 years of age, smoking was not protective OR 0.9 95% CI: 0.5-1.8).

Conclusions: High risk HPV prevalence in MFSW is very high, especially in the youngest women who have used OCP.

016

TRANSMISSION OF HEPATITIS C VIRUS IN AN HAEMODIALYSIS UNIT, BÉZIERS, FRANCE 2001

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Background: Following the report of several hepatitis C virus (HCV) infections among patients from one Haemodialysis Unit (HU), a multidisciplinary team (epidemiologists, hygienists, virologists) was constituted to identify transmission modes and control the outbreak.

Methods: A case was defined as any patient attending the HU, without anti-HCV antibodies at entry, with an episode of elevated alanine-aminotransferases (ALT) associated with a positive Polymerase Chain Reaction for HCV-RNA in 2001. A cohort-study was performed to evaluate the role of exposure to dialysis machines and health care workers in HCV transmission. Patients were followed-up for the year 2001. A nested case-control study on the same population was also carried out. An audit of care practices, the inspection of dialysis machines and a phylogenetic analysis of viruses were undertaken.

Results: Twenty two cases were identified among 60 patients and 4915 dialysis sessions at risk (incidence density = 0.45 per 100 patients/session). The transmission period lasted from 23/03/2001 to 25/12/2001. Five cases were infected by a genotype 1a HCV, four by genotype 1b and thirteen by genotype 2. Two sub-groups were identified among the later.

In the case-control study cases were more exposed to "a nurse who had connected a HCV positive patient previously" than controls with OR of 11 (95%CI: 2.6-47.3) for first connected after and 4.9 (95%CI: 1.3-18.4) for second connected after a VHC positive by the same nurse. In the cohort study exposed patients to "a nurse who has connected a HCV positive patient previously" were 17 (95%CI: 5.1-56.2) (the first connected) and 16.8 (95%CI: 4.2-67.9) (the second connected) times at higher risk of infection than non exposed patients. Multiple breaches in infection control procedures were documented.

Conclusions: This major outbreak involved three viruses. The main transmission mode was through nurse's care activity. Routine HCV screening test were not efficient to detect the outbreak. The HU was closed temporarily. No additional cases have been reported following the implementation of reinforced infection control procedures.

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WATERBORNE OUTBREAK OF GASTROENTERITIS IN A SPANISH VILLAGE, APRIL-MAY 2002

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Introduction: An increase of gastroenteritis cases notified by the general practitioner of a village near Madrid (Spain) on April 19th, 2002, prompted an investigation to identify the outbreak's extent, risk-factors and potential sources, and implement control measures.

Methods: Case-finding was performed through the general practitioner, the pediatrician, the village's pharmacy, the school, the kindergarten and by asking the cases whether they knew of other cases. Cases were defined as residents or visitors to the village one to three days before presenting at least one episode of loose stool or vomiting between March 1st and May 10th, 2002. A case-control study was performed among primary cases of the village families. One control per case was randomly selected from the telephone directory matched for age and neighbourhood. Odds of exposure to local school and various daily quantity of tap-water consumed were computed by conditional logistic regression. Samples from the municipal water supply and stool samples were analysed.

Results: We identified 143 cases, of which 90 were primary. The epidemic curve suggests person-to-person transmission or a continuing common source. Attack-rates were highest in the village centre (48.3/1,000 inhabitants) and among children <15 years (71.6/1,000). The secondary attack rate inside families was 0.3. The case-control study included 62 cases and 62 controls and suggests that the risk of illness was associated with attendance at the local school (OR 13.0; 95% CI 1.70-99.38) and consumption of tap-water (OR 3.7; 95% CI 1.02-13.14; dose-effect p 0.03). Local well-water had been intermittently added to the municipal water-supply applying incompatible disinfectants. Several water samples had low chlorine levels. No pathogens were detected from patients' stool samples.

Conclusions: Tap-water contaminated by local well-water is the suspected origin of this gastroenteritis-outbreak in an open community. Clinical signs were compatible with a viral cause. Local well-water should only be used for irrigation. When mixing waters, compatible mechanisms of disinfection should be used. Control measures should be applied to limit secondary spread in communities.

019

POOLED BLOOD SCREENING FOR anti-HIV, anti-HCV and HBsAg IN RECENT SEROCONVERTERS: ESTIMATING RISK OF TRANSFUSION-ASSOCIATED TRANSMISSION

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Background: Pooled screening of blood donors' samples reduces costs but may increase the risk of transfusion-transmitted viral infections. One of the main concerns is failure to detect recent seroconvertors in the window period. While developed countries are implementing highly sensitive but costly NAT-testing in mini-pools, resource-poor countries may have only limited blood screening. The objective of this study was to evaluate the risk of transmission of HIV, HCV and HBV in testing pooled-sera of recent seroconverters, using enzyme-linked immunosorbent assay (ELISA).

Methods: For each virus, five panels of repeated bleedings from identified seroconverters were obtained. For each sample, pools of size 6, 12 and 24 were tested. Lengthening of the window-period for each virus, by pool-size, was estimated using robust log-linear regression models. These values were then applied to evaluate the increase in transmission-risk compared to singleton ELISA testing. Calculations were based on the incidence risk/window period (IR/WP) model, using published estimates of window period and incidence rates among donors in Europe and the US.

Results: The percent lengthening of the window period (95% CI) for HBV were 4.4% (3.9-4.9%), 7.8% (7.4-8.3%) and 13.2% (12.5-13.9%) for pools of size 6, 12 and 24 respectively. For HCV, the window period increased respectively by 4.3% (3.7-4.8%), 5.1% (4.8-5.4%) and 10.3% (9.8-10.7%) for pools of size 6, 12 and 24. For HIV, the window period increased by 3.6% (2.7-4.1%), 4.1% (2.7-5.4%), 10.0% (9.5-10.9%) for respectively increasing pool size. The estimated transmission risk per donation for pool sizes 6, 12 and 24 were: 1:196,000, 1:190,000, 1:181,000 for HBV; 1:264,000, 1:262,000, 1:250,000 for HCV; and 1:1,030,000, 1:1,025,000, 1:970,000 for HIV. The comparable risks associated with single ELISA testing for these viruses would be 1:205,000, 1:276,000, 1:1,067,000 for HBV, HCV and HIV respectively.

Conclusion: Our findings indicated a 5% increase in transfusion-transmitted risk from recent seroconverters for ELISA testing done in small pools of size 6. Such risks need to be balanced against costs in countries where blood screening is not complete and where the incidence rates among blood donors is low.

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RUBELLA OUTBREAK AMONG LATINO AMERICAN WOMEN IMMIGRANTS, MADRID, DECEMBER 2002 TO MARCH 2003

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Introduction: Since 1982 the incidence of Rubella in Spain has fallen, and the vaccine coverage reached 90% of the population. The results of the serologic prevalence study from the Madrid community (2000) had shown more than 97% protection against rubella. Lately, the programme has shown some weakness to protect specific groups, due to vaccine efficacy or lack of coverage from the primary health services. The increase in the immigrant population brings new susceptible persons with the risk to develop rubella. In February 2003, the surveillance system from the Madrid Health Board detected an increase in the notification of rubella in Latino Americans women in reproductive age. The objective of the study was to characterise the outbreak and to define the contact patterns and recommend the control measures.

Methods: A descriptive study was carried out, and all the cases and their contacts were interviewed by telephone. A questionnaire was designed to collect information about the personal characteristics, immunity status, exposure history, serology results and case classification. A case was defined as a person with clinical symptoms of rubella, immigrant or related to, with a positive serology from the Regional Public Health Laboratory, who was resident or has visited Madrid, in the time span from 01/12/02 to 15/03/03. The contacts were persons related to a case by family, work or social links, resident or who has visited Madrid during the same study period. The risk group considered were immigrant's women in reproductive age, and children younger than 20 years old. The data collected were introduced and analysed in a database using EPINFO2002. A second phase of the study is underway to perform a prevalence study in the contact population.

Results: By active case finding, we identified 16 cases of rubella. The health areas affected were 1, 4, 5, 6, 7 and 11. The country of origin of 10 cases was Ecuador (62.50%), and the other countries represented were Argentina, Colombia and Dominican Republic. The mean time of residence in Spain was 41 months. The women with age between 20-30 years old were the most affected. The mean age was 24.85 years old. The housing density found was 4.4 persons per house. No one of the cases was vaccinated against Rubella. The mean number of contacts per case was 13 persons. 25(27.5%) women contacts were in the reproductive age group. 71.79% of the contacts were not immunised against rubella. The place of infection diffusion was the household for 67.95%.

Conclusion: We detected the spread of Rubella in the Latino American community in Madrid, Spain. In response to this emerging situation, the intervention proposed is a target vaccination programme addressed to this community to avoid the risk of the congenital rubella syndrome. The follow up of the serologic study, with the characterisation of the contact pattern will be continued.