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ROTATION INTERNAL MEDICINE AND INFECTIOUS DISEASES PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

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“Epidemiological patterns of multi-resistant Klebsiella and E.coli”

Introduction

In the context of the residency Internal Medicine – Infectious Diseases at the Erasmus Medical Centre, Rotterdam, The Netherlands a training period of 4 months were spent at the Pontificia Universidad Catolica de Chile in Santiago de Chile. The first two months were spent on the medical wards of public teaching hospital. The second two months were spent participating in the team of Infectious Diseases in a private teaching hospital. Description of details on the differences between health care facilities in Chile goes beyond this brief report. This report will give a brief overview on activities and observations during the clinical rotation. Furthermore, findings of the short research project will be presented.

Internal Medicine

Clinical activities

The first 2 months were spent in a large public teaching hospital in the south of the city as part of the medical team, consisting of the supervisor, final year resident and the intern. Medical wards for men and women are separated. Patients were followed from admission to discharge. Due to the system of insurances in Chile, people who enter the public system often present in a late stage of their disease. The natural course of diseases is common to observe. Encountered disease covered the broad spectrum of Internal Medicine. Concerning infection prevention all personal and staff were informed about the importance of hand hygiene and isolation of patients with multi-resistant microorganisms (m.o.). Health care personal was prompted to wash hands or use alcohol by widely distributed posters. However, equipment to apply necessary measures often failed. These observations initiated a small point-prevalence study.

Research

A point prevalence study was performed on the general medical wards (covering 10 of 11 rooms; 60 occupied beds), showing 25% (15/60) of the patients being cultured, 15% (9/60) proven multi-resistant m.o. Patients known to be colonized or infected with m.o. were “isolated”, meaning that they would be assessed by health care personal using special non-disposable gear and disposable gloves. Ideally, personal instruments for physical examination were available for the individual patient involved. Antibiotic use reached 42% (25/60).

Infectious Diseases (ID)

Clinical activities

The second two months of the rotation were spent as member of the ID team in the private hospital. There is no specialized ID ward and the team merely operates on basis of consultation and out-patient clinics. ID out-patient clinics are operated 3 times a week with once a week a travel clinic.

Part of the training period was spent in the microbiology and virology laboratories. A part from clinical activities there are frequent meetings and educational presentations.

During the period of clinical activities approximately 100 patient were followed-up. The team was mostly consulted for the occurrence of fever (29/100). All patients for whom ID was consulted were cultures. In 77% pathogenic m.o. were identified. In 35% multi-resistant m.o. were identified. All patient with multi-resistant m.o. were managed with contact-prevention. All patients arriving from other hospitals were isolated until screening cultures proved negative.

Almost all (97/100) patients were treated with antimicrobial or antiviral therapy. All categories of antibiotics were used with predominance of beta-lactam antibiotics (mainly cephalosporins; 34 patients with carbapenems), glycopeptides (i.e. Vancomycin) and quinolones. Mostly combined schemes of antibiotics were used. Thirty-four patients received 'other' antibiotics such as Clindamycin, tuberculostatics, treatment for toxoplasmosis, Colistin, Linezolid and Co-trimoxazol.

The team continued work activities after the earthquake. No large outbreaks were reported within the region of Santiago. An increase in Hantavirus cases was observed in the affected areas.

Research

In the context of a larger study on the occurrence and spread of multi-resistant Enterobacteriaceae in Chilean hospitals, Pulse Field Gel Electrophoretic (PFGE) results of Extended Spectrum Beta-Lactamase producing *E.coli* and *K.pneumoniae* were analyzed on clonality.

One-hundred-fifty-two isolates from 9 different Chilean hospitals over the country were analyzed for occurrence of clonality. PFGE-results of 72 isolates of *K.pneumoniae* (7-10 per hospital) and 80 isolates of *E.coli* (7-10 per hospital) were available for analysis. Overall, clonality was very common, ranging from 40-100% (median 84%) for *K.pneumoniae* and 20-100% (median 50%) for *E.coli*. Rate of clonality of *K.pneumoniae* was associated with the rate of clonality of *E.coli*, suggesting similar factors favorable of dissemination within a hospital. Clinical relation between the isolates could not be studied due to lack of availability of clinical details.