

**eP040**

**ePoster Session**

**Post-surgical and implant infections: from head to knee**

**Cost-effectiveness analysis of appropriate duration of antibiotic prophylaxis for prevention of neurosurgical infections**

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**Objectives:**This study aims to investigate the cost effectiveness of the appropriate duration of antibiotic prophylaxis in a middle income country.

**Methods:**A one-year prospective study was performed between June 2012 and 2013. The operations of spinal fusion, craniotomy and ventricular shunt were included to the study. The agent, timing, duration of antibiotic prophylaxis of patients were recorded. All patients received appropriate antibiotic for prophylaxis included to the study. If the patient received correct antibiotic with appropriate duration (< 1 day) defined as case patient. Control patient was defined as the patient received correct antibiotic longer than 24 hours.

Patients were followed prospectively to develop any SSI by hospital and post-discharge surveillance. Hospital surveillance was performed by Infection control team during their hospitalization by daily visits. The demographic data, associated risk factors and laboratory data including gram stain, culture results were collected.

Post-discharge surveillance was performed by calling all patients and an interview at phone. Patients were questioned about the symptoms of any SSI in one month after discharged or three months after if any implant exists.

The demographic data, characteristics of operations, infection control measures of two groups of patients were compared. We consider the cost analyses including bed, cost of antibiotics, laboratory costs and others.

**Results:**A total of 822 operations consisting craniotomy (n=558), spinal fusion (n=220) and ventricular shunt (n=44) were included to the study. Of these operations 762 (92.7%) were elective. According to wound classification 753 (91.6%) were clean and 69 (8.4%) were clean-contaminated operations. Study group was including 488 (%59.4) patients underwent an operations with appropriate duration of antibiotic prophylaxis. Controls group were consisting of 334 (%40.6) patients.

The demographical characteristics of groups did not differ. Craniotomy operations were significantly more frequent in study group. Based on RIC scores patients of study group were more likely included in RIC=0 category whereas patients of control group were in RIC=1 category. There was no difference between groups in terms of infection control measures (antiseptic showering, hair removal) except for length of preoperative hospital stay. Study group found to be hospitalized longer during preoperative period (p<0.001). The SSI rate in study group was 3.5% (17/488) and 3.6 (12/822) in control group (p>0.05). The hospital costs are calculated by each patient. Prophylactic antibiotic costs per patient was significantly low in study group whereas the total cost of antibiotics, laboratory and surgical procedure costs were significantly higher.

**Conclusion:**Although single dose antibiotic prophylaxis is recommended by current guidelines, prophylaxis longer than 24 hours is quite common in clinical practice in low and middle income countries. Our results concluded that antibiotic prophylaxis less than 24 hours is cost-effective. Prolonged course of antibiotic prophylaxis is not effective to reduce SSIs also in low and middle income countries.