

## **Comparative frequency evaluation of bacterial organisms isolated from clinical samples of ICU admitted patients, and related factors, in Ardabil-Iran at year 2013**

### **Abstraction**

**Introduction:** Microbiological infection plays vital role in determining the outcome as well as cost and duration of the hospital stay for patients admitted in ICU setup. Therefore regular surveillance of important pathogens and its related factors are mandatory.

The objective of this study was to find out the organisms causing infections in patients admitted in different Trauma-surgery, medical and neurology ICUs and related factors.

**Material & Method:** Our study was a retrospective descriptive-analytic study. During the period from January 2013 to January 2014, total of 520 samples (blood, respiratory tract, urine etc.) from patients admitted in Trauma-surgical, medical and Neuro-ICUs of Ardabil city-Iran were collected and processed for culture, identification and antibiotic susceptibility. The medical and microbiological information were recorded from all patients whose samples were positive.

**Results:** Out of 520 positive cultures the most frequent organisms isolated were *Pseudomonas* spp 24.6% (n=128), followed by *Klebsiella* spp 18.63% (n=97), *Acinetobacter* spp 15% (n=78) and *S.aureus* 17.1%. The mortality rate of patients with positive cultures was 13.67% (n=71) with a mean length of stay of  $13.7\pm 12.04$  days compared to  $7.5\pm 8.5$  days in survived. Mortality rate was 15.79% in neurology, 15.54% in surgical-trauma and 11.05% in medical patients. A significant relation between surgeries, CVS and mechanical ventilation with mortality ( $P<0.001$ ) was found. No significant relation between each type of ICUs and microbiology was detected.

**Conclusion:** Crude rate of positive cultures in Trauma-Surgical ICU was high. There was no significant relation in type of acceptance and organisms. Despite the high incidence of infections lower mortality rate was estimated. A significant relation was found between invasive procedures and mortality whereas no relation with bacteriology was detected.

**Key Words:** ICU, Bacterial cultures, Risk factors