ID: 2368

Congress: The First International Congress of Medical Bacteriology

Title: Relationship between the total use of antibiotics and the quantity of different antibiotics prescribed in Iranian hospitals

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Abstract: Background Objectives: consumption of antibiotics in Iran is related to the number of trade names for oral antibacterial agents. The purpose of this research was to provide whether there was a correlation between the number of antimicrobial agents used and total antibiotic use in Iranian hospitals. Participating hospitals were: Ibn sina hospital (mashhad) – Imam reza hospital (mashad) – Namazi hospital (fars, shiraz) – Hafez hospital (fars, shiraz) – Mortaz hospital (yazd) – Aban hospital (tehran) – Azadi hospital (tehran) – Imam khomeini hospital (tehran) – Mostafa khomeini hospital (tehran) – Shahid madani hospital (tabriz) – Ibn sina hospital (tabriz) – Imam reza hospital (tabriz) – koodakan hospital (children hospital ,tabriz) – Dr. Beheshti hospital (zanjan) – Alzahra hospital (isfahan) – Sepahan hospital (isfahan)

Materials and Methods: In this study, organized between march and august 2010, A total of 16 hospitals from 9 main provinces of Iran supplied data on antibiotic use for 2010, represented as the number of delivered daily doses per 50 resting bed-days (DDD/50 BD) and also numbers of different antibiotics used. Data were entered into a Microsoft Access database and analysis was conducted using SPSS 10.0 for Windows.

Results: Participating health care centres and hospitals used an average of 37 antibiotics in 2010. The most frequently used antibiotic in each hospital or health care centre accounted for a median of 22.14% (12–71.54%) of total use and the 10 most frequently used antibiotics accounted for a median of 84.92% (range 53.0–98.5%) of total use. Numbers of antibiotics used were considerably varied by geographical region. The median total antibiotic use was 37.3 DDD/50 BD. A statistically meaningful relationship was found between the number of antibiotics used and total antibiotic use for all hospitals.

Conclusions: The quantitative consumption of antibiotics in Iranian hospitalized patients was highly variable as was the number of different antibiotics used. In the two areas exhibiting highest total use, the greater the number of antibiotics used, the higher the total use of these drugs. Further studies are now needed to prove whether or not successful antibiotic limitation policies can reduce total antibiotic use and subsequently reduce antibiotic resistance.

Key word’s: Antibiotic, Antibiotic resistance, number of delivered daily doses per 50 resting bed-days (DDD/50 BD)

Presentation: Poster