Abstract: Background and objectives: The intestinal normal flora can become reservoirs of antibiotic resistance genes. It is suggested that the gram negative flora have an increased capacity to obtain antibiotic resistance genes and might act as reservoirs for transfer of resistance genes further to pathogenic bacteria. This study aimed to evaluate the fecal carriage of resistant E. coli and Klebsiella sp. in compare to the isolates from clinical samples.

Methods: 238 stool and 120 clinical samples were collected from outpatient and hospitalized patients from 7 hospitals in Tehran. Each homogenized stool sample was cultured on MacConkey agar. The microorganisms that grew were identified by standard biochemical methods. Antibiotic sensitivity testing of the isolates was performed according to the CLSI guideline using the disk diffusion method.

Results: Among 358 inpatients and outpatients samples, 330 isolates of E.coli (66.66%), and Klebsiella sp. (33.33%) were identified. Among the 13 tested antibiotics, the highest resistance rate for Klebsiella sp. and E. coli were belonged to ampilicillin (94.7/56%) and oxacililn (89.5/ 99%), for the clinical and fecal isolates, respectively. The highest rates of resistance for other antibiotics in the case of E. coli, were amoxiclav (100/64 %), amoxicillin (94.7/65.3 %), cefepim (42.1/17.1 %), cefotaxime (57.9/22.6), cephalothin (68.4/24.6 %) for clinical and fecal samples, respectively.

Conclusion: Our results suggested that the fecal carriage of resistant phenotypes related to the β-lactamase in E. coli in compare to the clinical isolates is rapidly increasing. This may be one of the causes of the dissemination of β-lactamase producing E. coli in the community and also hospitals. In the case of Klebsiella sp. there were no significant correlations between the two groups of samples, except for the ampicillin. Molecular typing of these isolates will help us to better understand this relationship.

Fecal carriage, E. coli, Klebsiella sp., β-lactamase, Antibiotic resistance

Presentation: Poster