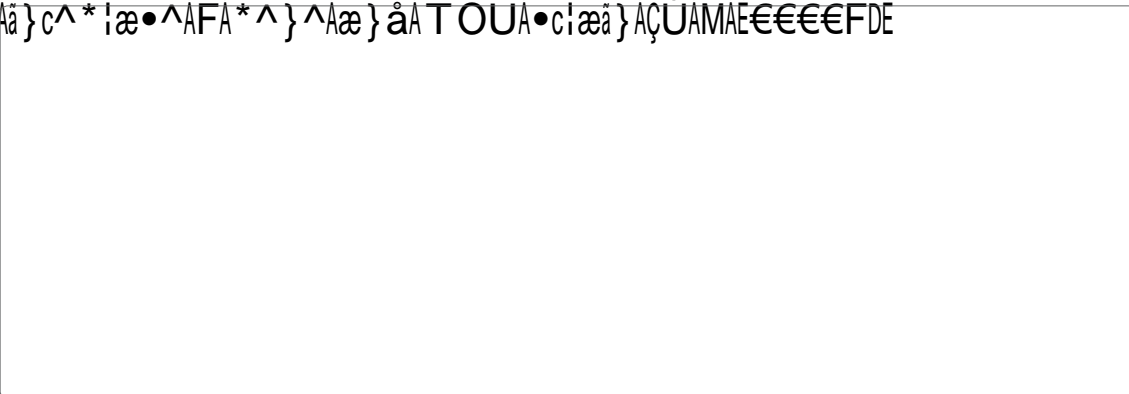


0' v d' "cedtdrpgg" bpggkwtgele ch k pgg"z' pgt @ pf + "bpf" dg j {dfugkm & "pig" ulb  
J 0 " gz pgt k " cpf " k pvgit qp " 3 " \* R " ? " 2 0 2 2 2 3 + 0 "

**Conclusion:** Ôæ!àæ] ^ } ^ { Á æ } áÁ c^c!æ& ^ &|ã } ^Á , ^! ^Á c@ ^Á { [ •cÁ ^ ^&cáç ^Á æ } cáàã [ cá& •ÉÁ V@ ^!  
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**Keywords:** Int1 gene; Shigella; Antibiotic Resistance; Carbapenem

**Introduction**

Class 1 and 2 integrons have the highest prevalence in Gram-negative bacteria [1]. The structure of class 1 integron consists of 5' and 3' protected regions and a variable region containing gene cassettes. Majority of the previous studies have shown that class 2 integron consists of the same arrays of 4 gene cassettes containing 3 antibiotic resistance gene cassettes (tfrA1, sat, aadA1) including trimethoprim, streptothricin and spectinomycin/streptomycin resistance as well as the orfX gene cassette with unknown function [2].

Integrons have an important proven role in disseminating



highly prevalent in developing countries [14]. Our results showed that *S. sonnei* was the main species in this study with 62.5% of all Shigella species and then *S. flexneri* with 21.875% was in the second degree. This finding was similar to data reported from Iran (Shiraz) as well as other countries, including Thailand [15]. This pattern was different from

against Shigella. Chloramphenicol (88%), gentamicin (79%) and ceftazidime (79%) can be the next treatments of choice. Shigella is also resistant to ampicillin (94%) primarily and cotrimoxazole (91%) secondarily.

Cotrimoxazole is a drug often used for the experimental treatment of diarrheal diseases [20]. Widespread use of this drug has led to the emergence of resistant strains of Shigella. In this study, Shigella showed high resistance to cotrimoxazole (91%). Previous reports in Iran have mentioned the resistance level of 92.2 to 94% against cotrimoxazole [21-22]. High resistance to cotrimoxazole has also been reported from Turkey (95%) [23]. According to our regional reports from Iran, ampicillin resistance was 94% and the previous study reported 57% [24]. These results strongly indicated that the use of cotrimoxazole and ampicillin is not appropriate for the treatment of severe diarrhea and dysentery in the West of Iran. *S. flexneri* resistant to ciprofloxacin was also identified from parts of India (46.25%) [23]. In the present study, 6 patients (18%) with Shigella isolates were resistant to nalidixic acid. In two reports from Tehran and Tabriz, 17.4% and 31% of the isolated Shigella strains were resistant to nalidixic acid, respectively [25].

Previous studies in Iran have also shown Shigella resistance to cephalosporins in the range of 7.57-3.7% between 2008 and 2018 [26]. This shows increasing resistance to cephalosporins in Iran compared to the other countries [27]. This finding is worrying, as previous studies in China, the Middle East and Southeast Asia have reported less resistance

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