Abstract: Background: The occurrence of drug-resistant Vibrio cholerae is being reported with increasing frequency worldwide. Spread of resistant strains has been attributed, in part, to class I integrons and sulfamethoxazole trimethoprim-constin (SXT-C). Material and methods: Sixty clinical V. cholerae isolates were isolated from four different provinces in Iran, which were subjected to antibiotic susceptibility testing, polymerase chain reaction amplification of class I integron and SXT-C, and sequencing of the amplified fragments. Ribotyping technique was used to assess the clonality of the isolates. Results: The highest and the least levels of antibiotic resistance were seen to SXT, streptomycin, and chloramphenicol (95%, 95%, and 92%, respectively) and doxycycline, gentamicin, and oxytetracycline (0%, 3%, and 3%, respectively). The results showed that out of the total of 60 isolates, only 1 contained class I integron, which harbored streptomycin resistance gene cassette (aadA2). This isolate showed ribotype pattern similar to the other strains (lacking class I integron) obtained in the same year (2006). On the contrary, the SXT-C was found in 95% of the isolates. These isolates showed three different but related ribotype patterns. Conclusion: Overall, the results of this study showed in significant contribution of class I integron in antibiotic resistance of our V. cholerae isolates. On the other hand, V. cholerae resistance to SXT, streptomycin, and chloramphenicol could be, in part, due to wide distribution of SXT-C among the isolates. In addition, the ribotype data suggest that the clinical V. cholerae population from 2004 to 2006 were homogeneous.

Keywords: Vibrio cholerae, antibiotic-resistant, class I integron, SXT,