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Original Article

Environmental Surveillance of Polio and Non-Polio Enteroviruses in Sistan and Balouchestan Province

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Abstract:

Background: Enteroviruses can easily circulate in the population through sewage and they are suitable indicators for environmental surveillance. On the other hand, in some countries there are evidences of silent circulation of viruses in sewage specimens despite no virus isolation from clinical specimens. Therefore, WHO has suggested environmental surveillance using surface water and sewage specimens for final confirmation of Poliovirus eradication. In this research, according to wild Poliovirus circulation in Afghanistan and Pakistan and probability of virus entrance to Iran, and also to assure wild Poliovirus eradication, the environmental surveillance was performed in Sistan and Balouchestan Province of Iran.

Methods: From March 2004 to February 2005, 86 specimens from 2 sewage disposal systems, 5 hospitals and surface water from several villages were collected by Grab Sample method and tested for Enteroviruses directly and using 2 concentration methods: Pellet and Two-phase. Then Poliovirus and Non-Polio Enteroviruses (NPEV) were serotyped by microneutralization method and Polioviruses were intratypically differentiated using ELISA and Probe Hybridization techniques.

Results: From a total of 86 specimens, Enteroviruses and Non-Polio Enteroviruses were isolated from 49(56.98%) and 46(53.49%) of specimens respectively. Polioviruses were isolated from 18(20.93%) specimens and none of them was wild Poliovirus fortunately. 13(17.81%), 39(53.42%) and 57(78.08%) of enteroviruses were isolated using Direct, Pellet and Two-phase methods, respectively.

Conclusions: The results of this research confirm the validity of environmental surveillance and Polio eradication in Sistan and Balouchestan Province.

Keywords:

Environmental surveillance . Sewage . Poliovirus . NPEV . Iran

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