SUMMARY

The big human Enteroviruses group presently consists of more than 70 different type that cause a wide range of diseases and syndromes. Non-Polio Enteroviruses are currently the most common cause of Acute Flaccid Paralysis in children due to the large number of Enterovirus serotypes.

The common diagnostic approach in a suspected Enterovirus infection is the isolation of the virus (stool samples) in susceptible cell cultures such as RD cell line this cells appearance CPE for polio viruses and NPEVs . Virus isolation is then followed by the use of a neutralization-type assay to identify the serotype of the isolated Enterovirus, a process commonly known as serotyping.

Acute flaccid paralysis (AFP) is a clinical syndrome characterized by rapid onset of weakness, affecting the muscles then progressing to maximum severity within several days to weeks and sometimes may lead to death .

The objective of this study is to isolate and identify Non-Polio Enteroviruses from three hundred stool specimens obtained from children aged less than 15 year's old showing symptoms of acute flaccid paralysis (AFP) from different Iraqi provinces and characterizing the different serotypes of these viruses by using both tissue culture (using RD cells) and neutralization-assay methods. This was done according to methods applied by reference laboratories recommended by World Health Organization.

National Polio Laboratory (NPL\ IRAQ) is the reference laboratory that is responsible for the laboratory part of AFP surveillance project and samples of this study were collected during the period (October 2010 to March -2011) from all Iraqi provinces.

A total number of Enteroviruses positive cases were 109 (36.33%) strains isolated on RD cells among 300 AFP cases from different Iraqi provinces. All positive cases on RD cell line (109 stool sample) were also cultured on L20B cell line. Poliovirus could grow on L20B, While, other enteroviruses could not grow on this cell line.

Showed Only 8 (2.67 %) stool samples from 109 positive stool samples could perform plaque on L20B. These 8 cases contain poliovirus as well and it is found that they were all collected from vaccinated patient with live attenuated oral Sabin polyvalent polio vaccine (SL Polio viruses) . The maximum frequency of SL Polio viruses were found in Missan (10%) and Diyala (10%) followed by Baghdad (6.67%). Non SL Polio viruses were isolated in north Iraqi provinces (0%).

Only 101 positive cases (33.66%) were containing only NPEVs isolated According to the results that obtained after culturing all stool samples on RD except 8 positive cases of SL Polio viruses.

The highest percentages of EV positive cases were found in Middle and South of Iraq. In Baghdad province EV positive cases were 44 (73.33 %) followed by Basrha province 26 (65%) then Missan 5 (50%); ,Diala 4(40%) and Wasit 7(35%).While North of Iraqi Provinces (Erbil, Duhok and Sulaimania) had no positive cases of EVs (0%).

The current study that is done in different Iraqi provinces shows that echoviruses (ECHO) had the highest prevalence affecting 79 cases (26.33%) out of 101 NPEVs. The present study showed that the maximum frequency of ECHO virus isolation was reported in Baghdad 31 (51.67%) and Basrah 21 (52.5%) but in north Iraqi provinces (Duhok, Erbil and Sulymania) the virus was not isolated. To a lower extent prevalence of coxsackievirus (Coxs) was seen affecting only 18cases (6%) and the

highest prevalence of this virus found in Baghdad province 7 cases (66.11)

And finally only 4 Non-typable Enteroviruses (NTEV)were isolated which had a prevalence of only 1.3%.

Study showed that Enteroviruses were high among males 64 (21.33%) as compared to females 45(15%) with significant difference.

NPEVs were also isolated from hundred apparently healthy children as a control group but to a lesser extent than AFP cases. Stool from control group were also cultured on RD and L20B cells and NPEVs constituted only eight cases (8%) which might be considered as a latent threat in this group to induce a clinical picture of AFP in future.