# RNA-Viruses and Vaccines

**Dr. Nadia DRISS**

Scientist – Hands on experience: over 9 years' research experience in microbiology and immunology

## Abstract

**The intrinsic factors of the RNA viruses give them extraordinary potentials, viral genius. Pathogenic RNA viruses, with a limited coding capacity, are able to withstand challenge of antiviral drugs and in some cases jump between species causing zoonotic disease. RNA viruses are potentially the most common important group cause of emerging diseases in humans, and they represent a challenge for global disease control.**

**RNA viruses which have inherently deficient or absent polymerase error correction mechanisms and are transmitted as quasispecies or swarms of many, often hundreds or thousands of, genetic variants. The crossing of the fitness valley as the genetic instability allowing rapid evolution to adapt to ever- changing ecologic niches.**

**The combination of the shift in lifestyle, human activities changes and the continuous population growth are driving increased rates of interspecies contacts that can develop into global pandemics. And consideration of these RNA viruses characteristics, have proved to be difficult to surveilling, to control and to anticipate emergence risks by modern medical technology.**

**Vaccines prevent from infection-related complications. However, conventional vaccine approaches, such as inactivated pathogens may induce little or no protection during a state of severe immunosuppression. In the case of live attenuated viral vaccines, they could cause adverse effects when the immune system is damaged.**

**The aim of this study is to evaluate the risk of immunodeficiency-associated vaccine-derived polioviruses (iVDPV) shedding among Tunisian patients with primary immune deficiency (PID). The objectives are to study the excretion kinetics of polioviruses (PV), the genetic features of the strains isolated and the host related factors that could cause prolonged shedding or stop the shedding.**

**PVs were assessed in stool specimens of 82 patients with humoral, combined, and other PID. Virus detection was performed by specimen inoculation into cells cultures, according to the WHO standard protocols. Isolated PVs were typed and intratyped by real-time PCR test; the 3D region and the whole VP1 region were sequenced. Almost cases excreting EV were followed on a monthly basis until 2 negative stool samples were obtained.**

## Biography:

Professor – Hands on experience: over 10 years'

- Ph.D degree - Faculty of Sciences Bizerte -Tunisia
- Degree Fundamentals Courses in Virology - Pasteur Institute Paris-France
- Medal of the Pasteur Institute Tunis
- Master's of Science in Microbiology - Faculty of Sciences of Tunis
- Master's of Science in Earth and Life Sciences - Faculty of Sciences of Tunis

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