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   Sommario/riassunto Influenza virus infections lead to thousands of deaths worldwide
                      annually and billions of dollars economic burden. Despite continuing
                      advances in our understanding of the immune evasion mechanism, the
                      disease remains one of the foremost threat for human being.
                      Traditional vaccines (attenuated and inactivated) mainly provide
                      protection by inducing virus neutralizing antibodies, targeting ever
                      changing surface antigens: Haemagultinin (HA) and Neuraminidase
                      (NA). Due to genetic shift and immune selection pressure, prevalence of
                      circulating influenza virus subtypes changes every year. Therefore,
                      mismatch between circulating strain and vaccine strain can critically
                      affect the success rate of these conventional flu vaccines, and requires
                      continuous monitoring of circulating influenza virus subtypes and
                      change in the vaccine formulations accordingly. The collective
                      limitations of existing flu vaccines urgently call for the development of
                      a novel universal vaccines that might provide the required protective
                      immunity to a range of influenza virus subtypes. New approaches are
                      being investigated mainly targeting conserved regions of flu proteins.
                      Some of these approaches include universally conserved epitopes of
                      HA, nucleoprotein (NP), capsid protein (M1) and ion channel protein
                      (M2) that induced strong immune responses in animal models. Some
                      attention and progress appears to be focused on vaccines based on the
                      M2 ectodomain (M2e) employing a variety of constructs, adjuvants and
                      delivery systems, including M2e-hepatitis B core antigen, flagellin

constructs, and virus-like particles (VLP). Animal studies with these M2e candidate vaccines demonstrated that these vaccine candidates can prevent severe illness and death but not infection, which may pose difficulties in both the evaluation of clinical efficacy and approval by the regulatory authorities. VLP vaccines appear to be promising, but still are mostly limited to animal studies. The discovery and development of new and improved vaccines have been greatly facilitated by the application of new technologies. The use of nucleic acid-based vaccines, to combine the benefits of in-situ expression of antigens with the safety of inactivated and subunit vaccines, has been a key advancement. Upon their discovery more than 20 years ago, nucleic acid vaccines promised to be a safe and effective mean to mimic immunization with a live organism vaccine, particularly for induction of T cell immunity. In addition, the manufacturing of nucleic acid-based vaccines offered the potential to be relatively simple, inexpensive and generic. Reverse Vaccinology and in-silico designing of vaccines are very innovative approaches and being considered as future of vaccines. Furthermore, various immuno-therapeutic agents also being developed to treat and minimize immuno-pathological damage in patients suffering from life threatening complications. For the treatment of such pathological conditions, various novel approaches such as administration of immune suppressive cytokines, blocking co-stimulatory signals or activating co-inhibitory signal of T cell activation, are being tested both in lab and clinics. The Research Topic on influenza virus vaccine and therapeutics will give an insight in to the current status and future scope of these new innovative approaches and technologies. Moreover, these new methods will also serve as a reference tool for the development of future vaccines against several other pathogens.