APPENDIX 1. Anti SARS-CoV-2 VACCINES

We have analyzed the interim recommendations of WHO for the use of the Pfizer–BioNTech COVID-19 vaccine[1], Moderna mRNA-1273 vaccine against COVID-19[2], the AZD1222 (ChAdOx1-S (recombinant)) vaccine against COVID-19 developed by Oxford University and AstraZeneca[3], and the Janssen Ad26.COV2.S (J&J)[4].

The Pfizer–BioNTech COVID-19 vaccine, BNT162b2, is an mRNA vaccine encoding a P2 mutant spike protein (PS 2) and formulated as an RNA–lipid nanoparticle of nucleoside-modified mRNA (modRNA). Its use is general recommended for subjects aged 16 years and above. The recommended schedule is two doses with an interval of 21–28 days. The most common solicited adverse reactions in participants 16 years of age and older included pain at the injection site, fatigue, headache, muscle pain, etc… The severe adverse effects are lymphadenopathy, bell's palsy, and allergic reactions [1,5].

The Moderna COVID-19 vaccine contains a synthetic mRNA (single-stranded, 5'-capped) encoding the prefusion-stabilized spike glycoprotein (S) of SARS-CoV-2 virus. The vaccine also contains the following ingredients: lipids (SM-102, 1,2-dimyristoyl-rac-glycero-3-methoxypolyethylene glycol-2000 (PEG2000-DMG), cholesterol, and 1,2-distearoyl-sn-glycero-3-phosphocholine (DSPC)), tromethamine, tromethamine hydrochloride, acetic acid, sodium acetate, and sucrose. It is administered intramuscularly as a series of two doses (0.5 ml each), given 28 days apart. During the clinical trials, the symptoms described related to the vaccine administration were pain at the injection site, fatigue, headache, myalgia, etc… Moreover, although rarely, adverse events of special interest were lymphadenopathy-related events, Bell's palsy, and hypersensitivity-related events[2,6].

AZD1222 vaccine is a monovalent vaccine composed of a single recombinant, replication-deficient chimpanzee adenovirus vector encoding the S glycoprotein of SARS-CoV-2 (ChAdOx1-S (recombinant). The recommended schedule is two doses administered with an interval of 4-12 weeks. Its use is general recommended for subjects aged 18 years and above, even if considering severe adverse reaction (the so-called thrombotic thrombocytopenia post-vaccination) temporarily related with the vaccine administration, each country has chosen independently [3,7].

Janssen Ad26.COV2.S (COVID-19) vaccine is a recombinant, replication-incompetent adenovirus serotype 26 (Ad26) vector encoding a full-length and stabilized SARS-CoV-2 spike protein. This vaccine does not contain adjuvants, preservatives, materials of animal origin, or fetal tissue. It is suggested for persons aged 18 years and above, and it may be administrated in a single dose. Apart from the classic symptoms after vaccination (fever, headache, diarrhea, vomiting), in the clinical trials no severe adverse effects were reported, even if recently, several cases of thrombosis are described[4,8].

References

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