MALARIA VACCINE AGAINST PLASMODIUM FALCIPARUM IN CLINICAL PHASE;

CHALLENGES AND PERSPECTIVES.

AUTHOR: PRISCA YAMEODOGO, ARMSTRONG MWEPU

INTRODUCTION

Malaria remains a major public Health concern. In recent years, several factors have undermined progress towards eradicating the disease, while there is only one prequalified antimalarial vaccine to date, RTS,S with an efficacy rate of 36%. The World Health Organisation recommends the development of a vaccine with at least 75% efficacy by 2030. The aim of this study was to provide an update on the status of malaria vaccines candidates that have reached at least phase II against Plasmodium Falciparum, the most feared species, to identify challenges involved in developing these vaccines, and to discuss the outlook.

METHODS

We conducted a systematic literature review on two platforms clinicaltrial.gov and ISRCTN registry to list vaccine trials, and an additional search on Pubmed, Embase, Google schoolar and scopus for results.

RESULTS

Ten active vaccines candidates were identified : RTS,S, The R21, PfSPZ, The PfSPZ-CVac, The PfSPZ-GA2, The MSP3-CRM, The RH5, The RH5,1, The RH5.2 –VLP and The Pfs230 D1M.

Pre-erythrocytic vaccines were most advanced with RTS,S prequalified and R21 in phase III, with 77% vaccine efficacy reported in phaseII. However, the serious adverse events reported(convulsion, meningitis), suggest that further investigation and monitoring are required in subsequent phase. The RH5 targeting the blood phase reduces the rate of parasite multiplication by 33%.

CONCLUSION

The approach of a multivalent vaccine combining R21 and RH5 could improve efficacy. The 2030 target could be reach. The next challenge will be to make the vaccine available in developing countries that bear the greatest burden of malaria.

Key word : Malaria, Vaccine, Effacacity , Challenges 2023.