Rotary D9640 Malaria Vaccine Project

WHO recommends R21/Matrix-M vaccine

The World Health Organization (WHO) has recommended a new vaccine, R21/Matrix-M, for the prevention of malaria in children. The recommendation follows advice from the WHO: Strategic Advisory Group of Experts on Immunization (SAGE) and the Malaria Policy Advisory Group (MPAG) and was endorsed by the WHO Director-General following its regular biannual meeting held on 25-29 September.
The full announcement is available at this website - https://tinyurl.com/45ep54s2

Some Clubs of D9640 were aware of the WHO announcement above and expressed concern about the possible effect on the D9640 Malaria Vaccine Project in association with Professor Michael Goode, Institute of Glycomics, Griffith University. The response below explains the difference between the two types of vaccine and that the two can be complementary for future use to protect against Malaria.

Official response to the WHO announcement by Professor Michael Good AO.

R21 is a sporozoite/liver-stage vaccine developed by Adrian Hill and colleagues from Oxford. It aims to kill the malaria parasite before it enters the bloodstream. It has a similar antigenic composition to the RTS,S, but uses a different delivery platform and a different adjuvant system. Phase II data have been published and presented at meetings and show between 70% and 80% protection from malaria for up to 12 months. It has not been tested head-to-head with RTS,S, which has an efficacy of approximately 30%. Because R21 and RTS,S are sporozoite/liver stage vaccines, they are 'all or none' in terms of protection from clinical disease, as a single sporozoite that escapes from the immune net will give rise to full-blown clinical disease once the parasite enters the red cell phase.

However, if Phase III data prove to be as promising as the Phase II data, R21 will be a very welcome development for at-risk malaria communities. Phase III data have not been published.

The benefits of R21 would appear to be an enhanced level of protection (compared to RTS,S), and a cheap cost of manufacturing. A negative for R21 will be that it will not provide enduring protection as sporozoites (which are inoculated in very small numbers by the mosquito) will not provide sufficient antigens to boost the antibody response. Once the antibody level drops below a protective threshold, the only way to bring it up is with a booster dose of vaccine. It is not known how often the boosters will need to be given, but a rough guess would be every 12 months (before the rainy season). This is a concern that Adrian Hill agrees with.

Because R21 (and RTS,S) target the parasite in the liver, it offers complementary protection to that which we hope will be afforded by the Griffth PlasProtecT vaccine, which targets the parasite in the blood. PlasProtecT aims to limit blood-stage parasite growth and reduce the disease impact of malaria. Looking to the future, PlasProtecT could be administered with R21.

Yours Sincerely,

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