Safety and immunogenicity of the malaria vaccine candidate GMZ2 in malaria-exposed, adult individuals from Lambaréné, Gabon.

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Abstract:

Malaria is still one of the major public health threats in sub-Saharan Africa. An effective vaccine could be a sustainable control measure that can be integrated into existing health infrastructures. The malaria vaccine candidate GMZ2 is a recombinant fusion protein of conserved parts of Plasmodium falciparum Glutamate Rich Protein and Merozoite Surface Protein 3 adjuvanted with aluminium hydroxide. GMZ2 is immunogenic and well tolerated in malaria-naïve adults from Germany. To assess safety and immunogenicity in malaria-exposed individuals, 40 adults from Lambaréné, Gabon were randomly assigned to receive either 100 μg GMZ2 or a rabies control vaccine three times in monthly intervals. Both vaccines were well tolerated. One month after a full course of vaccination, GMZ2-vaccinated individuals had 1.4-fold (95% confidence interval: [1.1, 1.7]) higher baseline-corrected anti-GMZ2 antibody levels and more GMZ2-specific memory B-cells compared to the rabies group (p=0.039), despite a high prevalence of GMZ2-specific immune reactivity due to previous intense exposure to P. falciparum.