

# Simplified artesunate regimen is non-inferior to WHO-recommended malaria treatment

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Credit: CDC

In African children, a 3-dose intramuscular (i.m.) artesunate regimen is non-inferior to the WHO-recommended regimen for the treatment of severe malaria, according to a trial published this week in *PLOS Medicine*. The trial, conducted by Peter Kremsner at Eberhard Karls Universität Tübingen, Tübingen, Germany and Hôpital Albert Schweitzer, Lambaréné, Gabon, and colleagues, did not show non-

inferiority of a similar 3-dose intravenous (i.v.) regimen.

WHO recommends that patients with severe malaria be given a 5-dose i.m. or i.v. regimen of artesunate at the time of admission (0 hours) and at 12, 24, 48, and 72 hours. In resource-limited settings, administering five doses on schedule can be challenging. In this open-label, non-inferiority randomized controlled trial, the researchers investigated the efficacy of three-dose i.m. and i.v. artesunate at 0, 24, and 48 hours. Among the 1,002 children who received per-protocol regimens, 78% in the three-dose i.m. group had 99% parasite clearance at 24 hours compared to 79% in the five-dose i.m. group, a result that met a preset criterion for non-inferiority. The three-dose i.v. regimen did not meet the non-inferiority criterion. Combined with the results of several secondary analyses, these findings provide evidence that a three-dose i.m. artesunate regimen may be used for treatment of severe malaria in African children.

The study's open-label design may limit the accuracy of its findings. Due to practical constraints, the primary endpoint was parasite clearance at 24 hours rather than survival. Further studies are needed to clarify whether treatment with artesunate or the malaria infection itself was responsible for the delayed anemia observed in 22% of participants. The authors state, "Simplifying [artesunate] usage with a once daily i.m. regimen in [severe malaria](#) is supported by our results, but because delayed anemia is common, patients should be monitored for this complication."

**More information:** Peter G. Kremsner et al. Intramuscular Artesunate for Severe Malaria in African Children: A Multicenter Randomized Controlled Trial, *PLOS Medicine* (2016). [DOI: 10.1371/journal.pmed.1001938](https://doi.org/10.1371/journal.pmed.1001938)

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