Effective use of dihydroartemisinin (DHA) is limited by poor water-solubility, poor pharmacokinetic profile and unsatisfactory clinical outcome especially in monotherapy. To reduce such limitations, we reformulated DHA into solid lipid nanoparticles (SLNs) as a nanomedicine drug delivery system. DHA-SLNs were characterized for physical parameters and evaluated for *in vitro* and *in vivo* antimalarial efficacy. DHA-SLNs showed desirable particle characteristics including particle size (240.7 nm), particle surface charge (+ 17.0 mV), drug loadings (13.9 wt %), encapsulation efficacy (62.3%), polydispersity index (0.16) and a spherical appearance. Storage stability up to 90 days and sustained release of drug over 20 h was achieved. Enhanced *in vitro* (IC_{50} 0.25 ng/ml) and *in vivo* (97.24% chemosuppression at 2 mg/kg/day) antimalarial activity was observed. Enhancement in efficacy was 24% when compared to free DHA. These encouraging results show potential of using the described formulation for DHA drug delivery for clinical application.

From the Clinical Editor

Malaria still poses a significant problem worldwide. One of the current drugs, artemisinin has been shown to be effective, but has poor water-solubility. The authors here described their formulation of making dihydroartemisinin (DHA) into solid lipid nanoparticles, with subsequent enhancement in efficacy. These results would have massive potential in the clinical setting.

Graphical abstract

Dihydroartemisinin (DHA) was packaged into solid lipid nanoparticles achieving desirable particle characteristics for nanomedicine drug delivery. The spherical DHA-SLNs were examined for antimalarial efficacy using both *in vitro* culture method and *in vivo* mice model. Results indicated significant enhancement of efficacy when compared to free DHA.