

In this issue

Nanoparticles

With science achieving increasing, exquisite control over the molecular world, new challenges have emerged in the organization and architecture of materials with so-called mesoscopic length scales. The most notable example is perhaps the new science of organized nanoparticles. In **page 1089** of this issue, Murali Sastry reviews the recent work from his group at the National Chemical Laboratory in this fascinating area; combining the self-assembly of monolayers on metal colloids with further organization of these particles into thin films. Particularly intriguing is the use of fatty acid thick films as complex media into which the uptake of nanoparticles has been monitored. The possibility to 'interdigitate' long chain compounds into the organic monolayer that caps colloids is also novel and this phenomenon, arising directly as a consequence of the large curvature of small particles, should greatly increase the utility of capped, functionalized nanoparticles in a number of applications.

Ram Seshadri

Thumbs down for an antimalarial

Journal editors are generally disinclined to accept data against prevailing theories and practices. Their pub-

lication bias is a bane for those who perform meta-analysis of published data. Negative evidence on the efficacy of 'Ayush-64', an antimalarial concoction has exceptionally found favour. The report by Neena Valecha *et al.* from Malaria Research Center (**page 1120**) demands attention for other reasons as well.

The drugs used to treat malaria are the aryl aminoalcohols, folate antagonists, antibiotics and new artemisinin derivatives. The choice depends on the immune status of the patient and the likely pattern of resistance. Nearly two decades ago, the herbal formulation Ayush-64 was added to the list and recommended for treatment of malaria.

With change of times and the rise of evidence-based medicine, methods of clinical assessment of medicaments have been refined. Patients are recruited based on rigid criteria and allotted to experimental groups, not at random but by systematic randomization. The end points are also carefully chosen. Thanks to the revival of interest in indigenous systems of medicine, Ayush was given ethical clearance for a clinical trial *vis-à-vis* chloroquine, a standard first-line pick for management of malaria, despite skimpy pharmacological data. The MRC trial is over and the herbal drug has not got the nod for inclusion in the national antimalaria programme.

Nevertheless, advocates of tradi-

tional medicine are unlikely to be reticent. They can contest the criteria for selection of cases, which do not consider the individual's *gunas* and variables such as dietary regimen and telluric influences. To them no two patients are similar. Their end point would have been restoration of the disturbances of the *dosha* equilibrium and not annihilation of the malarial parasites. The MRC trial anyway does not suggest that Ayush-64 is unconditionally ineffective or unsafe. There is paucity of relative data with respect to recrudescence rate after initial complete remission, incidence of resistance to the drug after repeated intake and cost for large-scale use. Be that as it may, for now Ayush-64 is under a cloud.

A major concern in malaria eradication is the evolvment of drug resistance outpacing antimalarial drug development. Though mechanisms of drug resistance to antimalarials are incompletely understood, chloroquine resistance is linked to polymorphism in genes encoding certain membrane proteins. Pharmacogenetics is expected to transform therapeutics in the future. Would it be thumbs up for Ayush-64 then?

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