

Recent High Impact Pediatric Papers - With Implications for Bhutan

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Mapping Malaria Mortality

Gething PW et al. Mapping *Plasmodium falciparum* mortality in Africa between 1990 and 2015. *New Engl J Med* 2016; 375:2435-2445.

Using new mapping techniques, Gething and colleagues evaluated changes in malaria mortality rates across sub-Saharan Africa since 2000. Overall, mortality has dropped by approximately 57%. However there are some regions, mostly in just seven countries, where mortality has not markedly changed. The areas where malaria mortality is not improving are characterized by limited bed net use and poor access to anti-malarial medications.

Despite increasing resistance of malaria parasites to anti-malarial medications and despite the ongoing lack of an effective malaria vaccine, it is positively exciting to see great improvements in malaria mortality rates in sub-Saharan Africa. Multinational collaborative efforts to improve availability of diagnostic testing, medications, and insecticide-treated bed nets have been effective.

However, as Bhutanese physicians know, local factors are important in the prevalence and impact of malaria. In Bhutan, malaria is limited to places where the *Anopheles* mosquito vector is prevalent - the low elevation southern parts of the country. The African experience, though, shows that local efforts are important to decrease malarial mortality, even when malaria transmission remains common nearby.

What can be done to finally overcome malaria in Bhutan? Gething's paper gives good direction. In parts of Bhutan where malaria is still transmitted, we must continue to focus on both preventive and therapeutic interventions. First, we must continue to block access of mosquitoes to humans, especially during evening and night hours. Bed nets should be available to people who sleep in places where mosquitoes can enter. Second, we must provide rapid evaluation and treatment of all sick children. The more quickly malaria is treated, fewer the parasites that can be transmitted to others.

Medications for Migraines

Powers SW et al. Trial of amitriptyline, topiramate, and placebo for pediatric migraine. *New Engl J Med* 2017; 376:115-124.

Recurrent headaches are common in children and treatment is challenging. Powers and colleagues investigated the benefit of specific medications in 328 children and adolescents with migraines. Patients were randomized to treatment with amitriptyline (1 mg/kg/day), topiramate (2 mg/kg/day) or placebo. Outcomes were considered favorable if headache frequency decreased by at least 50% on treatment as compared to a pre-treatment baseline.

Overall, 52% of patients treated with amitriptyline and 55% of patients treated with topiramate had favorable outcomes, and the difference between these two groups was not statistically significant. It is encouraging that headaches in more than half of the treated children improved by at least 50%. However, the placebo group did similarly well with 61% showing favorable reductions in headache frequency.

How do we interpret these results, and what do they mean for children in Bhutan? First, children with chronic recurring headaches should anticipate that significant improvement in their symptoms is possible. Second, doing something, even if that "something" is pharmacologically inactive, is effective. It is not likely that the placebo was actually helping the headaches. Rather, undergoing care that includes attentive interactions and frequent follow-up helps patients recover, even if no active medication is given. Whether we choose to provide preventive medications to children with migraine headaches or not, children with chronic pain conditions can benefit from repeated contact with healthcare providers when that contact is associated with optimism, attentiveness, and hope.

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