

the intramuscular vitamin K administered to such children at birth.

Considering the very high birth rate in India and that all the babies born in big hospitals receiving intramuscular vitamin K routinely, the number of childhood cancer cases added due to vitamin K could be substantial and alarming. The study of Mali *et al.*(1) has appropriately come at a time when intramuscular vitamin K is being increasingly associated and implicated with subsequent development of childhood cancers.

The IAP and National Neonatology Forum should take lead in urgently undertaking studies on this aspect, the implications of which might rather be shocking.

It will be very unfortunate, if findings of Professor Golding are confirmed, that to prevent a disease we have been inadvertently inducing a more serious and usually fatal disease.

Even when studies and observations regarding BCG vaccinations and the subsequent development of cancers in humans have been published(4,5), sadly no such published study or observation is available or forthcoming from India where mass BCG vaccination has been in practice for nearly four decades.

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Reply

The author has raised very relevant and pertinent question on the possible linkage of the administration of Vitamin K and the increased risk of childhood cancers as quoted from Professor Golding's study.

We fully endorse the author's view on the need for a comprehensive study in the Indian context. This study should specifically focus on the (a) cause and effect factors and (b) on the mode of administration of Vitamin K to the increased incidence of childhood cancers.

We would also like to point out that Vitamin K, preparation normally used in Western Countries is an oral based preparation (Phytonadione or Mephyton)(1) and the preparation that we use is a synthetic water soluble Vitamin K analogue (Menadione Sodium disulphite)(2,3). The impact of this difference also needs to be evaluated.

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P-Floxacin Induced Arthropathy

Resistant Gram-negative infections especially multidrug resistant typhoid fever in children necessitates therapy with fluoroquinolones, *i.e.*, ciprofloxacin, P-floxacin or O-floxacin. Systemic use of fluoroquinolones results in a number of side effects even when administered in recommended therapeutic doses. The common side effects are fever, drug rash, gastrointestinal complications, benign raised intracranial tension, seizures, arthralgia and rarely bone marrow suppression. Toxic crisis following treatment of typhoid fever with P-floxacin as well as hydroarthrosis, thrombocytopenia, skin and musculoskeletal complications, and rupture of Achilles tendon have been reported(1,2). Destruction of the growing epiphysis in animal models cautioned pediatricians all over the world against the routine use of fluoroquinolones, though recent studies in human beings do not conclusively prove this hypothesis(3,4).

Here we report P-floxacin induced arthropathy in an adolescent girl treated for enteric fever.

A 12-year-old female treated with P-floxacin for typhoid fever (Widal positive) by a private practitioner presented to us with joint pains and difficulty in getting up from bed of one week duration and persistence of fever even after 20 days of administration of P-floxacin (400 mg orally twice daily). For joint pains she had received ibuprofen-paracetamol combination and mefenamic acid without any relief.

General examination revealed only a palpable spleen. Investigations revealed sterile blood, urine and stool cultures, negative Widal test and normal hemogram. ASLO titre, rheumatoid factor, LE cell phenomenon, antinuclear antibody test and Mantoux test were negative. X-ray of knee joints and surrounding long bones were normal.

All the drugs were discontinued and the child was kept under observation. The fever subsided within 48 hours. The difficulty in getting up from bed disappeared. The joint pains gradually disappeared over a week's time in all the joints except the left knee joint which took almost 3 months to be completely pain free. Now the child is leading a completely normal life. Movements around all joints are normal with no skeletal deformity. Thus the routine use of P-floxacin in childhood enteric fever should be advocated with a word of caution.

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