

Earth-eating and reinfection with intestinal helminths among pregnant and lactating women in western Kenya.

Abstract:

We conducted a longitudinal study among 827 pregnant women in Nyanza Province, western Kenya, to determine the effect of earth-eating on geohelminth reinfection after treatment. The women were recruited at a gestational age of 14-24 weeks (median: 17) and followed up to 6 months postpartum. The median age was 23 (range: 14-47) years, the median parity 2 (range: 0-11). After deworming with mebendazole (500 mg, single dose) of those found infected at 32 weeks gestation, 700 women were uninfected with *Ascaris lumbricoides*, 670 with *Trichuris trichiura* and 479 with hookworm. At delivery, 11.2%, 4.6% and 3.8% of these women were reinfected with hookworm, *T. trichiura* and *A. lumbricoides* respectively. The reinfection rate for hookworm was 14.8%, for *T. trichiura* 6.65, and for *A. lumbricoides* 5.2% at 3 months postpartum, and 16.0, 5.9 and 9.4% at 6 months postpartum. There was a significant difference in hookworm intensity at delivery between geophagous and non-geophagous women ($P=0.03$). Women who ate termite mound earth were more often and more intensely infected with hookworm at delivery than those eating other types of earth ($P=0.07$ and $P=0.02$ respectively). There were significant differences in the prevalence of *A. lumbricoides* between geophagous and non-geophagous women at 3 ($P=0.001$) and at 6 months postpartum ($P=0.001$). Women who ate termite mound earth had a higher prevalence of *A. lumbricoides*, compared with those eating other kinds of earth, at delivery ($P=0.02$), 3 months postpartum ($P=0.001$) and at 6 months postpartum ($P=0.001$). The intensity of infections with *T. trichiura* at 6 months postpartum was significantly different between geophagous and non-geophagous women ($P=0.005$). Our study shows that geophagy is associated with *A. lumbricoides* reinfection among pregnant and lactating women and that intensities built up more rapidly among geophagous women. Geophagy might be associated with reinfection with hookworm and *T. trichiura*, although these results were less unequivocal. These findings call for increased emphasis, in antenatal care, on the potential risks of earth-eating, and for deworming of women after delivery.