



Long-term Effects of up to 13 Rounds of Mass Drug Administration with Diethylcarbamazine and/or Albendazole on Microfilaria Prevalence in Matara District, Sri Lanka

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Abstract

The Programme to Eliminate Lymphatic Filariasis (PELF) of Sri Lanka now is evaluating its achievements. Microfilaria prevalence and density have declined in sentinel sites. At this stage independent assessment of Mass Drug Administration (MDA) will help the programme to formulate future plans. In Walgama, Matara district, we studied the effects of up to 13 rounds of MDA (coverage over 96%) on filarial prevalence. In 2001-2002, 3 areas (Hamugewatta, Matotagama [sub division], Walgama) were subjected to MDA under our plan: in Hamugewatta, DEC alone (300 mg/adult; 150 mg/child of 2-12 years), in Matotagama-sd, combination of DEC and albendazole (400 mg) twice yearly, in Walgama, DEC alone once a year. In January 2003, following the national programme all 3 areas received DEC - albendazole combination, on the same annual/biannual schedule. The last MDA was in 2007. Mf survey with 60 µl finger-prick blood in 5 random clusters in each area were conducted in 2001 (pre-MDA population n=823) and follow ups in 2008; n=1003 and 2014; n=827. Mf prevalence, Hamugewatta / Matotagama[sd] in 2001, 18.7% / 5.7% significantly reduced in 2008 to 1.2/0.6, and in 2014 to 1.0 [p<0.001]/0.0 [p<0.01]) following 13 MDAs and Walgama (2001, 3.9%) significantly reduced in 2008 to 0.3, 2014 to 0.0 [p<0.05]) in 7 MDAs. Mf prevalence was significantly higher among males; Hamugewatta (16.5% male: 3.1% female; p<0.001), Walgama (7.6%: 0%; p<0.001) in pre-MDA survey; Matotagama 7% :4,8%. Hamugewatta registered > 1% microfilaraemia even after 13 MDAs. Accumulation of positive cases in older age groups (>20 years) was observed in all areas in pre-MDA survey; this was more marked in post-MDA surveys. Single dose MDA showed significant impact on mf prevalence irrespective of endemicity. In Hamugewatta, however, mf rate did not reduce below 1% even after 13 MDAs; remained over 1% after six years. On account of this result in Hamugewatta the national programme should initiate an efficient monitoring system to maintain the lowest level of mf prevalence, thus avoiding resurgence.

Keywords: *Lymphatic Filariasis, MDA, DEC and Albendazole, PELF, Residual microfilaraemia*