Wuchereria bancrofti

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**T C C , O C , 453 F P , A , GA 30307, U.S.A*
†U J , D , P.M.B. 2084, J P S , N
‡T C C /G 2000, 1 J K S , O T W R R , P.O. B 7772, J , P S , N
§S M H , P.M.B. 032, L , N S , N
¶S M H , N P I (NPI), P 1266 A B W , A II, P.M.B. 511, G , A , N
***F M H , L O , 9 F P II, F S , I - L , N*

R 1 S 2004, R 7 O 2004, A 11 O 2004

A prospective entomological survey was conducted in four sentinel villages in central Nigeria from 1999–2002, to assess the impact of annual, single-dose, mass drug administrations (MDA), with a combination of ivermectin and albendazole, on the transmission of

zones (unpubl. obs.). The principal local

could be sampled during each morning's work. The collected mosquitoes were immediately transferred to screened paper cups (which were labelled with the compound numbers) and kept alive in a cool box containing moist towels. In the afternoon, each female mosquito was killed, identified (as *A* s.l., *A* . , other *A* species, *C* , or another genus), and separated into head, thorax and abdomen on a glass slide. Each of these body parts was teased apart in a drop of normal saline under a binocular dissecting microscope. The slide preparation was then passed to a trained microscopist (D.P. or A.K.), who looked for the first-, second- or third-stage larvae of *W.* , using a regular light microscope at $\times 100$–$\times 500$.

The total number of people treated in each village in each year during the period of monotherapy (from 1993–1999) and combination therapy (from 2000–2002) was

Maiganga, Lankan and Gbuwhen were 82%, 78% and 63%, respectively.

DISCUSSION

The high prevalences of infection and infectivity recorded in the mosquitoes at the start of the present study indicate that 5–7 years of annual mass treatments with ivermectin alone failed to interrupt transmission of *W.* in the study area, where *A .* s.l. appears to be the main vector. In Burkina Faso, Kyelem . (2003) similarly reported that 5 years of semi-annual mass treatments with ivermectin alone (targetted at onchocerciasis) reduced but did not interrupt the transmission of *W.* .

During the present study, the addition of albendazole to the ivermectin-based MDA led, after three rounds of treatment, to significant reductions in the prevalences of mosquito infection in three of the four sentinel villages. Annual mass treatment with ivermectin–albendazole therefore appears superior to annual ivermectin monotherapy for lowering or stopping the transmission of *W.* , at least in rural areas of sub-Saharan Africa. The present results appear to represent the first entomological confirmation of the importance of albendazole in MDA-based programmes of LF control (Addiss ., 1997, 2004; Ismail ., 1998; Ottesen ., 1999; Dunyo ., 2000), although the present study has some limitations that need to be considered. Firstly, as there were no human-landing catches, it was impossible to determine

highest interval treatment coverage (86%) of the four sentinel villages. There was, however, no evidence of the mosquito infections that were detected clustering by compounds in any of the four villages (data not shown), indicating that the present data were not influenced by a few infected villagers who repeatedly refused treatment.

As the prevalence of mosquito infection is gradually reduced by repetitive rounds of MDA, entomological-impact monitoring (at least that based on traditional dissection methods) will become ever more difficult,

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