

Short Report

Absence of any adverse effect of inadvertent ivermectin treatment during pregnancy

Jean-Philippe Chippaux, Nathalie Gardon-Wendel, Jacques Gardon and Jean-Christophe Ernoult
Centre Pasteur du Cameroun, B.P. 1274, Yaoundé, Cameroun and Centre ORSTOM de Yaoundé

Although ivermectin is safe and well tolerated when distributed through mass treatment, pregnancy remains the major contraindication. PACQUÉ *et al.* (1990) considered that about half of the women in the first trimester of pregnancy might be treated inadvertently during community-based distribution of ivermectin, and stated that rates of miscarriage, stillbirth or major congenital malformation were not significantly different between treated and untreated women.

During a mass treatment campaign for onchocerciasis in the Vina valley, North Cameroon, 2710 women from 15 to 45 years old received ivermectin. Of 1495 women questioned in 1990, 225 were pregnant and were not treated. In 1991, 176 of 1215 women were pregnant and did not receive ivermectin. Every 3 months following the drug distribution, each woman was questioned about her pregnancy by a medical doctor. All abnormal events were recorded and checked at every subsequent survey. The date of delivery permitted determination a posteriori of the duration of pregnancy when the ivermectin was distributed. If delivery occurred within 40 weeks of ivermectin distribution, treatment was considered as having been given during pregnancy. Pathological events such as abortion, miscarriage, or stillbirth were recorded. Children born between 2 surveys were examined by a medical doctor to detect any malformation or abnormality in developmental status. The histories of 2580 women were sufficiently documented to be included in the study.

Ivermectin was not given to 401 pregnant women. Among the 2179 treated women, 110 were subsequently found to have been pregnant when they received ivermectin inadvertently. The prevalence of abnormal obstetric events occurring in treated women was not significantly different from that in untreated women ($\chi^2=3.08$, 3 degrees of freedom, $P>0.37$; Table 1). Most of the women reporting their pregnancy were in a more advanced stage of pregnancy, since local popular belief was that reporting early pregnancy could result in misfortune. In the untreated group, about 65% of pregnancies were of 4 or more months' duration, while in the treated group 85% of pregnancies were under 4 months and presented greater risks of abortion from other causes. We therefore compared only women, from both groups, in

Table 1. Outcome of all pregnancies according to treatment with ivermectin

	Mother treated	Mother not treated
No. of subjects	110	401
Early abortion (<4 months)	4 (3.6%)	9 (2.2%)
Late abnormal events (abortion, miscarriage, stillbirth)	17 (15.5%)	44 (11%)
Children not seen	8 (7.3%)	45 ^a (11.2%)
Normal children	82 ^a (74.5%)	304 ^a (75.8%)
Children with malformations ^b	0	2 (0.5%)

^aIncluding 1 or 2 sets of twins.

^bFor statistical calculation, these children were included with the 'late abnormal events' group.

the first trimester of pregnancy. Again, the prevalence of abnormal obstetric events did not differ significantly between the 2 groups ($\chi^2=2.43$, 3 degrees of freedom, $P>0.48$; Table 2).

This study confirmed the observations of PACQUÉ *et al.* (1990), that ivermectin did not induce any major specific congenital malformation, nor did it increase the rate of abortion and miscarriage, even if treatment was given during the very early stages of the pregnancy when the

Table 2. Outcome of first trimester pregnancies according to treatment with ivermectin

	Mother treated	Mother not treated
No. of subjects	97	142
Early abortion (<4 months)	4 (4.1%)	8 (5.6%)
Late abnormal events (abortion, miscarriage, stillbirth)	10 (10.3%)	23 (16.2%)
Normal births	75 ^a (77.3%)	99 ^b (69.7%)
Children not seen	8 (8.2%)	12 (8.5%)

^aFour children died after normal birth.

^bOne child died after normal birth.

risk of complications is greatest. Considering the benefits of ivermectin treatment for people heavily infected with *Onchocerca volvulus*, and the hypothetical nature of the risks of its administration during pregnancy, the large-scale mass distribution of ivermectin must be encouraged. The precaution of avoiding its administration to women notifying a pregnancy should be adequate.

Acknowledgement

This work received financial support from the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (ID no. 870336).

Reference

Pacqué, M., Munoz, B., Poetschke, G., Foose, J., Greene, B. M. & Taylor, H. R. (1990). Pregnancy outcome after inadvertent ivermectin treatment during community-based distribution. *Lancet*, 336, 1486-1489.

Received 21 July 1992; accepted for publication 12 August 1992

ORSTOM Fonds Documentaire

N° 38.784 ex 1

Cote : B

- 6 JAN. 1994

P 17 8 0