

Disopyramide and breast feeding

The letter of MacKintosh & Buchanan (1985) in the June issue on excretion of disopyramide in human milk promoted us to report a case we observed some time ago.

A 38-year-old woman had been taking disopyramide 200 mg regularly twice daily because of cardiac extrasystoles. She continued to exclusively breast feed her healthy daughter, born at term 8 weeks earlier. After 1 week's treatment she noticed that her baby was crying more and was restless after the meals. The girl also slept less soundly. Her mother connected these symptoms with the drug she was taking and contacted us.

We examined the infant (weight 5190 g) on the fifth day of the disopyramide therapy in our hospital. We could not detect any objective signs of disopyramide effects and she appeared normal during the day of observation.

With the informed consent of the mother we took a limited number of blood samples from both the child and the mother, as well as samples of the breast milk. The concentration of disopyramide was determined by a specific gas chromatographic method, a modification of the methods by Doedens & Forney (1978) and Aitio (1979). The method has a sensitivity limit of 0.05 $\mu\text{mol l}^{-1}$.

The mother had serum disopyramide concentrations of 3.7 $\mu\text{mol l}^{-1}$ and 5.5 $\mu\text{mol l}^{-1}$ in the samples taken before and 3.5 h after the dose of 200 mg disopyramide. The concentrations of disopyramide in the breast milk were 1.7 $\mu\text{mol l}^{-1}$ and 2.9 $\mu\text{mol l}^{-1}$ respectively. This gives milk/plasma ratios of 0.46 and 0.53. Our findings are in good agreement with the data of MacKintosh & Buchanan (1985) even though they determined disopyramide in the aqueous fraction of the milk and we in whole milk.

The milk samples were collected at the end of breast feeding. The infant had serum concen-

trations of 0.4 $\mu\text{mol l}^{-1}$ before and 0.3 $\mu\text{mol l}^{-1}$ both 1 and 2.5 h after the first meal following the dose to the mother. The amount of disopyramide ingested (in the worst case) by the infant was calculated to be 1.15 mg day⁻¹. The calculation was based on the actual feeding schedule (six times/day), on the measurements of the amount of milk ingested (195 g, mean of two measurements) by weighing the baby before and after a meal and the maximum milk concentration of the drug (1 $\mu\text{mol} = 0.339$ mg). Even at higher therapeutic concentrations in the mother's serum the dose would hardly exceed 2 mg day⁻¹.

The symptoms were of transient nature and more likely caused by the mother's apparent anxiety about breast feeding while taking the drug than by the drug itself. Another plausible explanation is infantile colic — for which incidentally anticholinergic drugs are sometimes recommended as a treatment.

Our findings support those of Barnett *et al.* (1982) and MacKintosh & Buchanan (1985). The recommendation to terminate breast feeding, as some reference guides advise (Boyd, 1982; Briggs *et al.*, 1983) if disopyramide treatment is used, seems exaggerated. However, we recommend close supervision of the infant and drug level determinations, if necessary.

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References

- Aitio, M.-L. (1979). Simultaneous determination of disopyramide and its mono-*N*-dealkylated metabolite in plasma by gas-liquid chromatography. *J. Chromatogr.*, **164**, 515–520.
- Barnett, D. B., Hudson, S. A. & McBurney, A. (1982). Disopyramide and its *N*-monodesalkyl metabolite in breast milk. *Br. J. clin. Pharmac.*, **14**, 310–312.
- Boyd, J. R. (1982). *Drug facts and comparisons*, pp. 449–452. Philadelphia-Toronto: JB Lippincott.
- Briggs, G. G., Bodendorfer, T. W., Freeman, R. K. & Yaffe, S. J. (1983). *Drugs in pregnancy and lactation*, p.128. Baltimore: Williams and Wilkins.
- Doedens, D. J. & Forney, R. B. (1978). Gas-chromatographic analysis of disopyramide. *J. Chromatogr.*, **161**, 337–339.
- MacKintosh, D. & Buchanan, N. (1985). Excretion of disopyramide in human breast milk. *Br. J. clin. Pharmac.*, **19**, 856–857.