

- amikacin in serum of infants. *Antimicrob Agents Chemother* 1977;**11**:1027-32.
- 11 Windorfer A, Jr, Pringsheim W. Studies on the concentrations of chloramphenicol in the serum and cerebrospinal fluid of neonates, infants and small children. Reciprocal reactions between chloramphenicol, penicillin and phenobarbitone. *Eur J Pediatr* 1977;**124**:129-38.
 - 12 Schentag JJ, Cumbo TJ, Jusko WJ, Plaut ME. Gentamicin tissue accumulation and nephrotoxic reactions. *JAMA* 1978;**240**:2067-9.
 - 13 Riley HD, Jr, Rubio T, Hinz W, Nunnery AW, Englund J. Clinical and laboratory evaluation of gentamicin in infants and children. *J Infect Dis (Suppl)* 1971;**124**:S236-46.
 - 14 Klein JO, Herschel M, Therakan RM, Ingall D. Gentamicin in serious neonatal infections: absorption, excretion and clinical results in 25 cases. *J Infect Dis (Suppl)* 1971;**124**:S224-31.
 - 15 McCracken GH, Jr, Chrane DF, Thomas ML. Pharmacologic evaluation of gentamicin in newborn infants. *J Infect Dis (Suppl)* 1971;**124**:S214-23.
 - 16 Finitzo-Hieber T, McCracken GH, Jr, Roeser RJ, Allen DA, Chrane DF, Morrow J. Ototoxicity in neonates treated with gentamicin and kanamycin: results of a four-year controlled follow-up study. *Pediatrics* 1979;**63**:443-50.
 - 17 Itsarayoungyuen S, Riff L, Schauf V, Hamilton L, Otrembiak J, Vidyasagar D. Tobramycin and gentamicin are equally safe for neonates: results of a double blind randomized trial with quantitative assessment of renal function. *Pediatric Pharmacology* 1982;**2**:143-55.
 - 18 Bock BV, Edelstein PH, Meyer RD. Prospective comparative study of efficacy and toxicity of netilmicin and amikacin. *Antimicrob Agents Chemother* 1980;**17**:217-25.
 - 19 Smith CR, Maxwell RR, Edwards CQ, Rogers JF, Lietman PS. Nephrotoxicity induced by gentamicin and amikacin. *Johns Hopkins Med J* 1978;**142**:85-90.
 - 20 Milner RDG, Ross J, Froud DJR, Davis JA. Clinical pharmacology of gentamicin in the newborn infant. *Arch Dis Child* 1972;**47**:927-32.

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Commentary

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The authors draw attention to the incidence of potentially toxic gentamicin concentrations in the newborn. They point out that toxicity in the neonate is not well documented and it is important to stress this. The publication of this report, and others like it, is apt to substantiate and give further credence to the belief that aminoglycoside oto- and renal toxicity are likely and clearly established adverse effects in newborn practice. This is not the case and there is little evidence to suggest that the use of trough values below 2 mg/l and peak values below 12 mg/l are appropriate guidelines in newborns, infants, or children. Indeed, the manipulation of dosing to produce concentrations conforming with these values may so necessitate extension of the dose interval that efficacy is compromised. For the present, the major indication for monitoring values is to determine whether values clearly above the minimal inhibitory concentration of the likely causative organism are reached.

The results of a large North American study on adverse effects in newborns is expected shortly. Until this time and the time when further appropriate and definitive data are available, it seems reasonable to monitor aminoglycoside values as in this paper, particularly to show expected efficacious concentrations. A cautionary approach to the interpretation of values commonly considered to be toxic is, however, suggested.