LETTERS TO THE EDITOR

Drugs and the elderly

Sir: I was interested to read the article by Bird on drugs and the elderly. I agree that a substantial proportion of doctors will not understand pharmacokinetics. Unfortunately, their level of understanding will not be helped by some of the errors that have crept into this article.

For drugs which display first order kinetics the plasma half life and clearance are constant irrespective of the amount of drug available in the body for elimination. This is in contrast with a drug which displays zero order kinetics, where the clearance falls with increasing concentration as the elimination process becomes saturated. The definition of the volume of distribution of a drug is not, as stated in this paper, the amount of drug in the body available for elimination, but is the theoretical volume of fluid in which the drug is distributed if it existed in the same concentration elsewhere as it does in the plasma. This would be given by dividing the total amount of drug in the body by the plasma concentration. It is also incorrect to state that if the volume of distribution is reduced the peak plasma concentration will increase. This will be the case if the distribution process is rapid, but another major determinant of peak plasma concentration is the rate of absorption, and for a drug which is rapidly absorbed but slowly distributed, such as digoxin, volume of distribution will have a negligible effect on peak plasma concentration.

Finally, I find the term 'accumulation', as used here, confusing. Accumulation is not a phenomenon that depends upon the property of a drug, nor are there drugs which accumulate and drugs which do not accumulate. It depends upon the relation between the half life of the drug and the dosing interval and, by definition, accumulation occurs if the drug is given at a dosage interval of less than the half life. This is even in young patients; accumulation of piroxicam will occur and we are speaking about in elderly subjects is relatively greater accumulation. It must also be stated that accumulation is not, in itself, a bad thing but is in fact necessary to produce fairly stable plasma concentrations.

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1 Bird HA. Drugs and the elderly. Ann Rheum Dis 1990; 49: 1012-1


Cryptosporidial enteritis complicated by conjunctivitis

Sir: Shepherd et al recently reported two children with cryptosporidial enteritis complicated by reactive arthritis.1 A 13 year old girl with a past history of epilepsy, asthma, and hypothyroidism presented with a two week history of profuse watery diarrhoea, colicky lower abdominal pains, lethargy, nausea, vomiting, scattered arthralgic and myalgic pains. She also had conjunctivitis in both eyes. The child was admitted and stool examination showed oocysts of Cryptosporidia spp. No other pathogens were uncovered, and she eventually made a spontaneous recovery; her conjunctivitis persisted.

Reiter's syndrome may follow urethral infection or gastroenteritis, and the clinical features of the condition—namely, arthritis, conjunctivitis and urethritis or, gastroenteritis, are well known. Shepherd et al described two female paediatric cases (and referred to one adult male case described by others) where cryptosporidiosis was complicated by reactive arthritis2; all these subjects were evidently immunocompetent. In addition, two potentially relevant cases positive for antibody to HIV have been described, one being a 27 year old homosexual man with diarrhoea, urethritis, conjunctivitis, arthritis, and cryptosporidial enteritis,3 and the other a 4 year old child (sex unknown) with cryptosporidiosis who developed conjunctivitis as part of a more profound systemic illness (which was subsequently diagnosed as measles).4

Our patient presented with scattered arthralgic and myalgic pains associated with her gastroenteric illness; accordingly, although the pathogenesis of cryptosporidial enteritis in immunocompetent subjects remains poorly understood, it is feasible that Reiter's syndrome may represent a potential clinical consequence of the condition. It may be pertinent to note that unlike the almost total male exclusivity of Reiter's syndrome associated with urethritis, among cases of Reiter's syndrome associated with gastroenteritis (of whatever underlying cause) a much larger proportion occur in women.5 In addition, the syndrome has been reported occurring in sexually inactive children.6

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Ann Rheum Dis: first published as 10.1136/ard.50.7.526-a on 1 July, 1991. Downloaded from http://ard.bmj.com/ on April 27, 2022 by guest. Protected by copyright.