INTRODUCTION

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The magnitude of drug response is a function of the concentration of drug attained at a site of action and this concentration is related to the volume of distribution of the drug (body weight & size) .

Some effects of age on the quantitative aspects of drug activity are inseparable from those attributable to size , since the two variables are directly related during the early part of life . However , age , not size , is the more dominant factor in the variability of drug action in the infant . The elderly also frequently respond to drugs in a manner that can not be impacted merely to differences in body weight . These individuals at the extremes of the life - span are often unusually sensitive to drugs . This apparent increase in sensitivity is associated with changes in rates of absorption , distribution , biotransformatiom or excretion .

In newborns , particularly premature infants , many of the enzyme systems responsible for normal metabolic conversion and drug biotransformation are underdeveloped . The combination of depressed renal function and decreased rates of drug biotransformation can now adequaltely account for many drug toxicities in the newborn infant that previously were inexplicable .

For neonates , in contrast to adults , there is a paucity of information regarding drug disposition (absorption , distribution , metabolism & excretion) . Disastrous experiences such as chloramphenicol - induced " gray baby " syndrome are dramatic illustrations of the importance of understanding the

fundamental principles involved in drug disposition & action in neonates .

This essay has been organized to include the broad overviews of general pharmacologic principles important to drug management of the newborn disease , and a reviiw of selected drugs which are currently being utilized in the treatment of newborn diseases .