

tissues, any more than  $V_d$  by itself implies a particular pattern of distribution. On the contrary, actual measurement of morphine concentrations in brain—presumably its principal site of analgesic action—revealed an increase rather than a decrease in brain concentrations during acidosis. The “paradoxical” result is probably explained by an increase in cerebral blood flow during hypercarbia that more than offsets the decrease in morphine’s lipid solubility.

Volumes of distribution are useful numbers provided their limitations are clearly recognized. They can estimate the proportion of the total amount of a drug that is present in “peripheral” or “tissue” compartments. But volumes of distribution as such do *not* tell us precisely where the drug is and what the individual tissue concentrations are. Only direct analysis of organs and tissues can provide this information.

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## Obstetric Anesthesia

**EPIDURAL ANALGESIA AND TWINS** In this study the effects on mothers and infants of epidural analgesia for labor and delivery of twins were examined. Fourteen women with twins received lumbar epidural analgesia. Maternal radial-artery and umbilical vessel blood-gas and acid–base measurements together with Apgar scores were determined. Resulting values were compared with those of women receiving epidural analgesia for labor and delivery of one infant. Apgar scores and blood-gas values for first

twins were virtually the same as those for singleton controls. This small series confirms the problem of second-twin compromise, but this was minimal and was more pronounced in nonvertex presentations, as would be expected. Lumbar epidural analgesia for labor and delivery of twins is recommended, and it appears to be a safe form of analgesia for this situation. (*James FM III, and others: Lumbar epidural analgesia for labor and delivery of twins, Am J Obstet Gynecol* 127:176–180, 1977.)