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A Review Article on Bioavailability and Bioequivalence Studies

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Abstract: *Bioequivalence is a comparison of the bioavailability of two drugs, typically a brand name drug and a generic version. Bioavailability refers to the rate and extent to which the active ingredient is absorbed into the bloodstream Bioequivalence ensures that a generic drug is as safe and effective as the brand name drug. It gives patients confidence in the quality of generic medicines. When a drug is given directly into a vein (intravenously), its bioavailability is 100%, as it goes straight into the circulatory system. For other methods, like swallowing a pill, some of the drug is lost during digestion and metabolism, so its bioavailability is less than 100%.A bioequivalence study proves that a generic drug delivers its active ingredient into the bloodstream at the same rate and to the same extent as the original drug If two drugs are proven to be bioequivalent, they are considered therapeutically equivalent, meaning they should have the same effect on the patient. it must be proven to perform like the original brand-name drug. A special study, called a bioequivalence study, compares the two drugs in the body. If the generic drug delivers its active ingredient into the bloodstream at the same speed and in the same amount as the original drug, it is considered bioequivalent. When this happens, it is also considered "therapeutically equivalent," meaning it will have the same medical effect on the patient. This allows a pharmacist to substitute a less expensive generic for a brand-name drug.*

Keywords: Bioequivalence, Bioavailability