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DIALYZABILITY OF DRUGS IN INTERMITTENT HEMODIALYSIS

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BACKGROUND: Dialyzability, the extent of drug that is removed in a dialysis session, is primarily determined by the pharmacokinetic properties of the drug, technical aspects of the dialysis procedure, as well as the type of dialyzer membrane. Drug removal during hemodialysis affects drug effectiveness, the administration timing around the dialysis schedule, and the needs for supplemental dosing. However, dialyzability data is often limited and difficult to interpret in the available literature.

METHODS: A comprehensive literature review of pharmacokinetic studies of drug dialyzability in patients undergoing chronic intermittent hemodialysis was conducted. A total of 186 drugs were reviewed utilizing three databases (PubMed, EMBASE, and International Pharmaceutical Abstracts). The dialyzability data, where available, along with the pharmacokinetic parameters of the drugs and clinical experience of the renal pharmacists were used to provide dosing recommendations for patients on intermittent hemodialysis.

RESULTS: The medications are grouped by indications and their dialyzability properties are presented within each class, along with recommendations and rationales for adjustments, if any, in dosing and administration timing around the hemodialysis schedule (see Table). Posters, booklets, and an online website were developed as references.

CONCLUSIONS: This literature review combined with clinical experience provides dosing recommendations for patients undergoing intermittent hemodialysis. The information presented are useful to clinicians caring for patients in the hemodialysis units.