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Incompatibility of Intravenous Drugs

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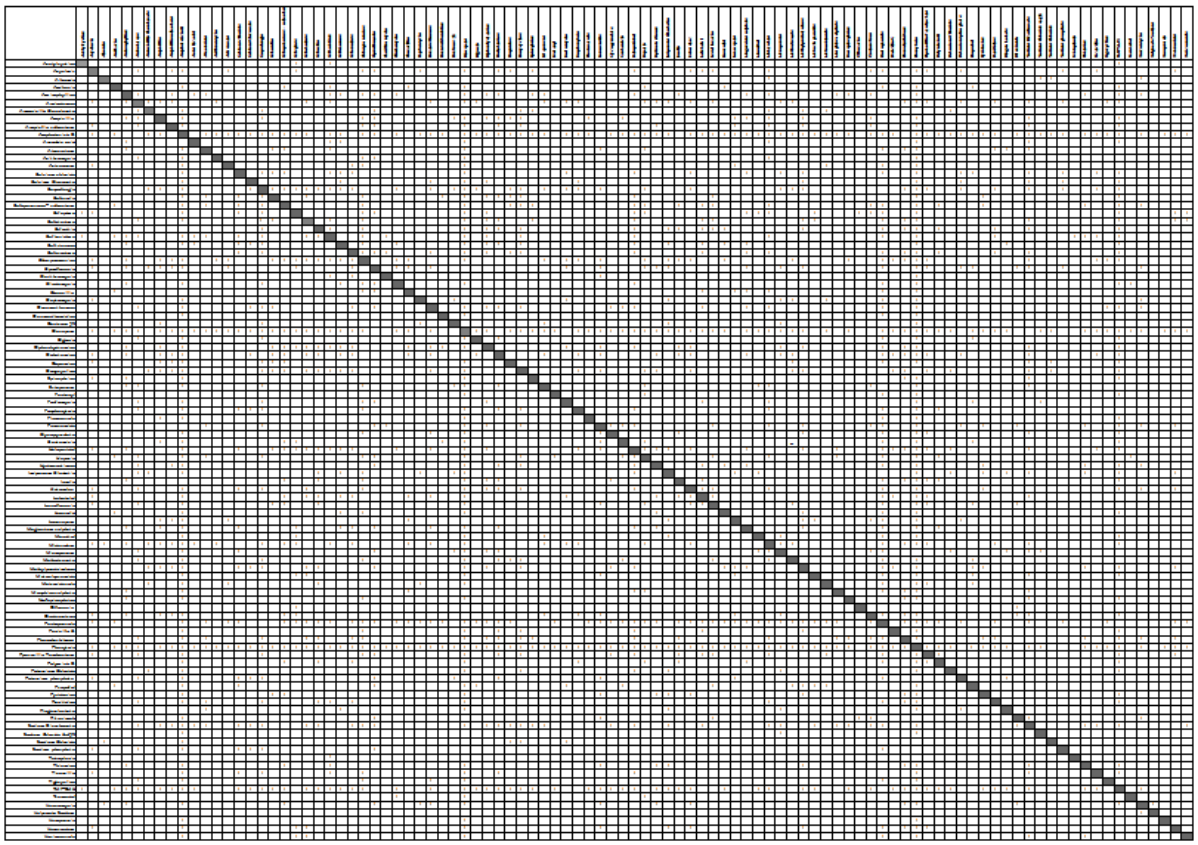
A pharmaceutical admixture of drugs with appropriate diluent in a suitable dose given through Intravenous (IV) route is commonly use in critical care areas[(1)]. Most patients admitted in critical care areas require multiple IV medications to maintain homeostasis. In a hospital setting, intravenous therapy is commonly used because of the rapid pharmacological effect [(2)]. Healthcare professionals are often required to mix these IV drugs with their diluents together and administer them. However situations may come up to mix multiple iv drugs together due to limited parenteral access. So, it mandates to check the compatibility of drugs that are mixed together before connecting to the patient [(1)].

An undesirable product formed when two or more incompatible drugs or diluent mixed together which affects the safety, efficacy and stability is defined as IV incompatibility. It may happen at any stage of product preparation as compounding, formulation, manufacturing, packaging, dispensing, storage and administration of drugs. Incompatibility in IV medication admixtures can be either Physical, Chemical and Therapeutic. Various other factors contribute for escalating the complexity of IV drug administration such as concentration, temperature, storage, dilution, order of mixing the medications and technique of administration [(3, 4)].

- Physical or Pharmaceutical incompatibilities happen when two drugs are mixed and an undesirable product is formed. It may be evident as change in colour, odour, viscosity and morphology.
- Chemical Incompatibility occurs due to chemical properties of drugs like pH change, Oxidation-reduction and acid-base reactions, Or complex formations which could be noticed by effervescence, Decomposition, color change and explosion.
- Therapeutic incompatibility occurs in two phases as pharmacokinetic and pharmacodynamic, either by altering the absorption, distribution, metabolism and excretion or synergism, antagonism, altered transport respectively. These effects may alter the therapeutic efficacy of a product by prior concomitant admixture.

The purpose of this chart is to provide information on incompatibility data of multiple drugs, although there are different types of incompatibilities described we didnot provide the types in our chart. Incompatible drug combinations are just highlighted as "I". The incompatibility data is taken from Trissel's IV compatibility [(5)].



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