

### 1.2.1 Classification of drug interactions

Drug interactions are classified as pharmacokinetic and pharmacodynamic interactions (Corrie and Hardman 2011; Ito *et al.* 1998; Kashuba and Bertino Jr 2001; Pleuvry 2005). Pharmacodynamic interactions occur due to the presence of two drugs at the same site of action, at an unspecified site of action or at different receptor sites to produce antagonistic, synergistic and additive interactions. Antagonistic interactions happens when two drugs interact at a specific receptor on the cell membrane, nucleus or cytoplasm such example is the competitive antagonism of benzodiazepines by flumazenil which is used as antidote for benzodiazepines overdose Synergistic interactions occur when the intensity of effect for the combined drugs is greater than would be of purely additive effect (Corrie and Hardman 2011; Jonker *et al.* 2005). Oral anticoagulants (e.g., warfarin) and heparin produce synergistic effect (Craig and Stitzel 2004). Additive effect is shown with nitrous oxide and volatile agent where fifty percent of the nitrous oxide minimum alveolar concentration (MAC) plus fifty percent of volatile agent MAC equal in anaesthetizing effect to that of 100% MAC of either agent alone (Corrie and Hardman 2011).

Pharmacokinetic interactions involve interactions due to absorption, distribution, metabolism, and excretion (Corrie and Hardman 2011; Ito *et al.* 1998; Pleuvry 2005).