

Interfering with the metabolism of drugs via administering certain supplements can lead to limiting the side effects with maximum efficacy using lower doses especially with the growing consumption of supplements. Nowadays a widely used supplement for osteoarthritis is glucosamine with a well demonstrated in vitro antioxidant and radical scavenging effects (Xing et al., 2006).

Previous work suggested that glucosamine is postulated to inhibit the metabolic enzymes of the liver and therefore leading to an increase in the bioavailability of drugs. This can best be reached through saturating the enzymes by prior administration of glucosamine for a period of time followed by the administration of the drug (Shubbar, 2011). As this suggests a broad range of applicability and huge benefit on many levels for both the patient and pharmaceutical industry, therefore, this study was designed in order to test this hypothesis.

This study is considered a pilot study which is by definition an exploratory study utilizing small experimental sample size with limited scope that gives insight into the actions, efficacy, and safety of a drug or even devices but cannot provide definitive support for specific mechanistic or therapeutic claims (Loscalzo, 2009).

In order to test the hypothesis of glucosamine metabolic enzymes inhibition activity in the liver and the feasibility of pursuing it on a larger scale, a pilot study with 6 subjects as the sample size was chosen.

In this pilot study, glucosamine is administered to subjects to investigate the effect of metabolic enzyme inhibition in the liver on orally administered drugs, namely in this case diacerein. According to approved study protocol, a single dose of diacerein is given to 6 subjects as the first stage, the blood samples obtained from the subjects were analyzed and the baseline of the pharmacokinetic parameters for each subject was established pre-