Aim and Objectives
Phenytoin is one of the most effective and widely used antiepileptic drugs. Phenytoin induced toxicity is considered to be associated with oxidative stress. Intervention of antioxidants in phenytoin induced toxicity and oxidative stress is considered worthwhile to improve the quality of antiepileptic treatment. The aim of the present research work is to investigate the adverse effects of phenytoin and to evaluate and compare the influence of selected antioxidants such as Vitamin C (Vit C), Vitamin E (Vit E), Alpha Lipoic Acid (ALA) and N Acetyl Cysteine (NAC) on phenytoin induced oxidative stress and adverse effects.

**Objectives of the present investigation are**

- To evaluate the effect of supplementation of selected antioxidants on phenytoin induced haematotoxicity.

- To investigate the influence of antioxidants on behavioural abnormalities induced by phenytoin.

- To study the hepatoprotective potential of selected antioxidants against phenytoin induced hepatic damage.

- To assess the ability of the selected antioxidants on phenytoin induced metabolic disorders such as hyperlipidemia and hyperglycemia.

- To evaluate the antioxidant potential of the selected antioxidants against phenytoin induced oxidative stress.

- To investigate whether the selected antioxidants interfere with the pharmacokinetic and pharmacodynamic profile of phenytoin.