

Preface

Natural processes of differentiation, development and aging cause apoptotic cell deaths which are caused due to the formation of free radical generation (OH^\cdot , O^\cdot) through the different metabolisms (Halliwell and Gutteridge, 1985; Tyurin, 2000). The free radicals generation can be induced, enhanced by exposure of organisms to various natural and other products that lead to consequences of cell deaths, other cell pathological effects leading to tissue injury and in acute conditions may result in animal death. In developing animal it may develop the abnormalities at subacute concentrations (Choudhary, 2006).

In case of brain, free radicals during natural aging or pathological conditions lead to various neurological disorders Viz. Parkinson's disease (impaired motor control), Alzheimers disease (degeneration of brain).

During development if the balance of free radical generation lead to higher levels of free radicals it also causes many abnormalities, series conginitive deficits or behavioural abnormalities (Sarah *et. al.*1999).

In recent years, exposure of animals and humans to polluting agents is being continuously increased through normal living or through occupational compulsion. It is time that these types of studies be performed in developing animals. The abuses of which that are caused in inccming generations be conveyed to the society at large so that alert and precondotinary measures can be though off.

Thus the present project was designed in which 0.5mM H_2O_2 was introduced at different development hours of brain differentiation and development and its effects were observed on the completion of brain formation. Observaticns were also done in intermittant intervals.

This damage to chick brain caused by H_2O_2 was studied in presence of vitamin C, an antioxidant present in cell.

To evaluate these results, mortality, histology and distribution of glucosaminoglycans and sialic acid was studied because they are known to play role in cell migration, differentiation and development.

The results observed are presented in the following thesis.