

## PREFACE

The problem entitled "the evaluation of the nag bhasma toxicity" is the part of the efforts of this laboratory since 1984 to test and evaluate the claims of different Ayurvedic drugs especially different kinds of bhasmas. The work has helped to understand some of the metabolisms that are mediated through ayurvedic drugs. Since their structures in the terms of modern chemistry are not known, the animal testing helps to understand the probable mode of action of the drugs. Therefore there is a need that toxicity if any should be worked out. Since WHO has recognised the importance of traditional and ethnic medicines it is essential to verify the claims of these drugs to popularise them in integrated medicine applications. In vivo testing of the toxicity of Ayurvedic drugs in laboratory animals is essential to understand their metabolism. These studies applying various Cell Biological, Physiological and Clinical parameters may give a metabolic pathway that can be used to test the claims of Ayurveda that the drugs are free of any side effects. If it is true the data can be used for the development, improvement and applications of modern drugs.

The present Dissertation is based on the data deduced from the Nag bhasma toxicity testing experimental schedule. Maximum therapeutic dose in use was used as maximum dose (90 mg) and it was split into three increasing concentrations to study the intermittent changes if any. The drug treatment intervals were also selected from the intervals prescribed in Ayurveda. Usually one Saptak (7 days) is primarily used; thus 7, 14 and 21 days intervals were used. The probable toxicity being of lead; 20mg lead nitrate /kg body wt./day for 7,14 and 21days treated rats were used for comparison. The data obtained is presented in VII Chapters.

**Chapter I Introduction-** It includes the reasons to take the problem, to select the animal, to select the parameters and review of relevant literature.

**Chapter II Material and Methods-** The details of animals used, methods used for various parameters and statistical methods used for data analysis are given in this Chapter.

**Chapter III Influence of Nag bhasma and Lead nitrate on blood haemoglobin content and its distribution in erythrocytes-** Since lead is known to affect RBCs and haemoglobin; it's content in blood and histochemical localisation in RBCs was carried out. The data is presented in tables, graphs and microphotographs.

**Chapter IV Liver and kidney function tests-** Alterations in SGOT (AST), SGPT (ALT), urea and creatinine content are analysed and presented in tables and graphs.

**Chapter V Nag bhasma mediated changes in the histological architecture of the liver and kidney of albino rats -** The alterations in liver and kidney histology are presented in microphotographs and are discussed with relevant literature.

**Chapter VI Nag bhasma mediated changes in lysosomal enzymes of liver and kidney of albino rats -** Alterations in hepatic and renal acid phosphatase,  $\beta$ -glucuronidase and Cathepsin D activities are presented in tables and graphs and are discussed with relevant literature.

**Chapter VII General Discussion—**Results of Chapters III, IV, V and VI are considered together. At the references cited are included