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RESEARCH ARTICLE

Errata

Administration of Garlic Essential Oil Restored the Altered Enzymatic and Non-enzymatic Parameters and Pulmonary Histoarchitecture in Mice Subjected to Lead Nitrate

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Abstract

The focus of the current research work was to unfold the therapeutic potential of Garlic Essential Oil (GEO) in altered oxidative stress, biochemical parameters and histoarchitecture of pulmonary tissue of mice intoxicated with the inorganic salt of Lead. Thirty six (36) mice were used in the experiment, and they were divided into 6 groups, with 6 mice in each group. The experimental groups were as: control/untreated, Lead Nitrate (LN), LN + low dose of GEO, LN + high dose of GEO, LN with standard drug (silymarin) and LN with vehicle olive oil. The total duration of the experimental study was of 30 days. The outcome of the study showed downstream levels of SOD, CAT, GPx, GSH and TPC and upstream levels of LPO, total level of cholesterol, LDH, ADH and GGT. Toxicant exposure also de-structured the pulmonary tissue and on the other side both low and high doses of GEO, standard compound silymarin and vehicle olive oil improved the altered enzymatic and non-enzymatic parameters and re-structured the distorted pulmonary tissue to a greater extent. Thus, it is concluded that GEO plays a vital role in imparting protection to lung tissue from lead poisoning.

Keywords: *Allium sativum*, Lead Nitrate, Lung

Abbreviations: BALF- Bronchoalveolar lavage fluid; DAS- Di allyl sulphide; DADS- Diallyl di sulphide; GEO- Garlic essential oil; LN- Lead Nitrate; ROS- Reactive oxygen species

1. Introduction

Heavy metals are constant pollutants which are present in the environment and cause harmful and numerous dysfunctions to the specific organs of the body. They cannot be broken down into the human body but rather get stored and inhibit the normal functions of the cells and tissues after communicating with several macromolecules such as proteins and enzymes[1]. It is believed that lead (Pb) is the primary heavy metal that finds its way into the environment from the production of coal, iron, steel, oil, batteries, smelters, solid waste, and tobacco smoke. The gastrointestinal and respiratory systems are the primary routes of lead exposure[2]. According to the Toxic Substances and Disease Registry (ATSDR 2017) Lead is considered as the second most common toxic substance. Lungs are the main and sensitive organ of the human body which gets exposed to heavy metals like Lead.

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