



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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SHORT ABSTRACT

The pesticide and nanomaterials induced environmental toxicity is problematic and is responsible for various kinds of diseases today. Under these circumstances evidence based assessment of pesticide and nanomaterials induced toxicity and evidence synthesis for the same is very much needed. The present study explores the evidence synthesis techniques like Systematic Review and Scoping Review in organophosphate and nanomaterials induced environmental toxicity. A systematic review of the organophosphate exposure induced health impact has been done, based on the data from multiple databases covering both human and in-vivo studies. The study indicated that susceptibility to OP pesticide toxicity can be determine by two exonic polymorphisms viz. PON1L55M and PON1Q192R SNPs in human population. The mechanism of OP pesticide toxicity is attributed to the inhibition of acetylcholinesterase (AChE). Scoping review for nanomaterials induced environmental neurotoxicity was carried out to find the link between various neurodegenerative diseases and nanomaterials. It was found that there are limited number of longitudinal or observational studies regarding environmental nanomaterials induced neurotoxicity. Most of the reviews considered for scoping review were based on in-vivo and in-vitro models, and few based on epidemiological studies. No observational studies for the pre-defined period were found. Most of the reviews emphasized on the neurotoxicity mechanisms and route of exposure.