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Effect of phthalates on reproductive biomarkers of infertile male

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Phthalates are used in personal and consumer products, food packaging materials and polyvinyl chloride plastics and have been measured in the majority of the general population of the India. Consistent experimental evidence shows that some phthalates are developmental and reproductive toxicants in animals. This study explored the association between environmental levels of phthalates and altered reproductive hormone levels in infertile adult male. Blood and urine samples were collected from 150 infertile patients and 75 fertile volunteers recruited through Department of Urology, Safdarjung Hospital, New Delhi. Selected phthalates and their metabolites were measured in serum and urine samples by GC-MS and UPLC using NIOSH/OSHA detailed protocol. Linear regression models explored the relationship between specific gravity-adjusted urinary phthalate monoester concentrations and serum levels of reproductive hormones, including Estradiol, Testosterone, AP, LD, GGT and hydroxysteroid dehydrogenase. Although we found significant correlation between several phthalate (DICHP, DMOP, DEHP, BEHIP, DBP and DDIP) compounds and mean ranks of testosterone and estradiol in subject, indicating that steroid hormones were associated with phthalates in Indian population. Thus phthalates and their metabolites might be independent risk factors for male infertility.

References

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Biography

Rashmi Rana has joined Department of Research, Sir Ganga Ram Hospital, New Delhi, India as Scientist in 2017 and she did his Masters in Biomedical Sciences and PhD in Biochemistry from AIIMS, New Delhi, India. She is recently working on Medical Toxicology as toxicology research is primarily to be concerned with three aspects of toxicology: Adverse effects of therapeutic agents, acute intoxications and chronic poisoning/environmental toxicology. She has published 7 international research papers and 1 national and she was elected member of many societies.

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