

Effect of Phthalates on Male Infertility: Myth or Truth?

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Abstract : Phthalates have been used as additives in industrial products since the 1930s, and are universally considered to be ubiquitous environmental contaminants. The general population is exposed to phthalates through consumer products, as well as diet and medical treatments. Animal studies showing the existence of an association between some phthalates and testicular toxicity have generated public and scientific concern about the potential adverse effects of environmental changes on male reproductive health. Unprecedented declines in fertility rates and semen quality have been reported during the last half of the 20th century in developed countries and increasing interest exists on the potential relationship between exposure to environmental contaminants, including phthalates, and human male reproductive health. Phthalates may be associated with altered endocrine function and adverse effects on male reproductive development and function, but human studies are limited. The aim of the present study was detection of phthalate compounds, estimation of their metabolites in infertile & fertile male. Blood and urine samples were collected from 150 infertile patients & 75 fertile volunteers recruited through Department of Urology, Safdarjung Hospital, New Delhi. Blood have been collected in separate glass tubes from the antecubital vein of the patients, serum have been separate and estimate the phthalate level in serum samples by Gas Chromatography / Mass Spectrometry using NIOSH / OSHA detailed protocol. Urine of Infertile & Fertile Subjects was collected & extracted using solid phase extraction method, analysis by HPLC. In conclusion, to the best of our knowledge the present study based on human is first to show the presence of phthalate in human serum samples and their metabolites in urine samples. Significant differences were observed between several phthalates in infertile and fertile healthy individuals.

Keywords : Gas Chromatography, HPLC, male infertility, phthalates, serum, toxicity, urine

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