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## Novel food borne diseases and their prevention

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The chemicals present in food include a wide spectrum of substances that may exist as naturally occurring components as contaminants; or as adulterants added for the purpose of undue profits. Among the various contaminants and adulterants of concern are: (1) Oxytocin, a nonapeptide hormone, has been detected in several milk samples that is responsible for affecting the physiology and function of the ovaries which has been related to early puberty in girls; (2) Our studies showed that a disease, hepatomyoencephalopathy (HME) in several adjoining areas of western UP and Uttaranchal (India) leading to child mortality, is related to the consumption of the seeds of a wild plant *Cassia occidentalis* (CO). The toxic moieties were identified as anthraquinone derivatives; and Cyclosporine A plus N-Acetyl cysteine treatment reduces the mortality; (3) Investigations from our laboratory suggest that the deaths in children especially in Muzaffarpur are occurring in the litchi cultivating areas.

These deaths are related to undernourished children wherein hypoglycemic encephalopathy is caused due to the presence of a compound, methylenecyclopropyl glycine (MCPG) in litchi fruits that causes derangement of fatty acid  $\beta$ -oxidation which in turn inhibits gluconeogenesis in liver. The patients with unconsciousness should be given infusion of 10% dextrose for recovery; (4) Mustard oil adulterated with Argemone oil (AO) causes a disease called 'Epidemic Dropsy'. Studies have shown that the toxic ingredient of AO, sanguinarine, causes gall bladder cancer that has been linked to the population of Indo-Gangetic basin, where mustard oil is predominantly consumed. Systematic bio-antioxidant therapy has been found to be effective in treating the patients. Thus, there is a need to restrict the presence of various contaminants & adulterants and strategies should be made for remedial actions to benefit the society.

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