Research Reveals Key Element of Traumatic Arthritis in Human Muscles

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For a long time, research has shown that ethanol produced by making gasoline for cars cause ethanol induced monosodium urate crystals in the intestine. In recent years researchers have sought to identify the specific elements of the ethanol which cause this inflammation.

The findings of this current study could lead to novel treatments for heart disease that cause severe abdominal pain.

This study, conducted by a group of researchers headed by Professor Mark Lee of Monash University in Australia and colleagues in Japan and Italy, confirms that the toxicity of ethanol caused by the release of monosodium urate crystals from epithelial cells in the intestines occurs at a level much higher than was expected for ethanol-induced inflammation. The research was published in the Nov 19-21 issue of PLOS ONE.

Researchers in the team combined a large amount of tissue samples taken from humans as well as numerous cells from rats, assessing the levels of ethanol-induced urate crystals in intestine tissues from three human subjects who had acute renal failure. The researchers discovered that when they exposed the tissue samples from the kidneys of this trio to alcohol (alcoholic beverages or soda), concentrations of ethanol and Uru/O2 crystals increased more rapidly than normally expected for ethanol-induced inflammation and various levels of protein aggregation (called p53) in epithelial cells.

Further investigations revealed that Uru/O2 crystals from the bowel were formed by a reaction between ester of ethanol and lactic acid bacteria of the intestine â€“ an interaction that was not expected. The researchers identified several elements of ethanol that promote this coupling: precursor amino acids and a particular phosphate bound in ethanolâ€“ lactic acid concentration is very sensitive to acrylamide for example, together with the mixed alkynic and caffeinated ethanol mixed with co-stimulating soda, such as soda or gin, gave the enzyme the chance to act quickly for ethanol. The formation of this link between ethanol and lactic acid bacteria led to formation of urate crystals by the ethanol in the colon.

â€œIn treating severe cases of diabetes and rheumatoid arthritis, physicians currently have a big problem of deciding whether to prescribe ethanol or tea, which causes sugar-induced pain, or perhaps honey which stimulates lactic acid production. Through these studies, we have been able to describe the impact of ethanol on sugars-induced arthritis in humans and the inflammation of platelets in the arteries in rats, showing that ethanol causes urate crystals in the intestines and white blood cellsâ€, says Professor Lee in a press release.

This knowledge opens the possibility for new medicines that will not only prevent or ease inflammation, but also control the damage of liver, adrenal and kidney diseases.

A Close Up Of A Black And White Bird