HANGOVER CURE READY FOR CLINICAL TRIALS

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A potential cure for hangovers is ready for testing in humans, claims a Swedish-based researcher. Wayne Jones, a Welshman, last week published work which throws new light on why people suffer the morning after a night of hard drinking. Jones believes that a drug 4-methylpyrazole (4-MP) may prove a potent cure for even the worst hangover. He now seeks backing from pharmaceutical companies to organise human trials of the drug.

If the drug proved a success, it would have enormous sales potential and be of significant benefit, because hangover is a major socio-medical problem in the Western world," said Jones.

Jones, who carried out his research at Stockholm's Karolinska Institute, has charted the biochemistry linked with hangovers. His latest research, published in the current issue of Pharmacology and Toxicology, strongly implicates methanol as the main cause of hangovers.

Volunteers gave themselves hangovers by drinking 1.5 litres of red wine. It contained 95 grams of ethanol per litre, and 100 milligrams of methanol per litre. The morning after they had drunk wine, the volunteers' breath was tested by gas chromatographs for indications of blood concentrations of ethanol and methanol.

The results showed that the volunteers flushed ethanol from the body relatively quickly. But methanol remained in the blood stream up to 10 hours after ethanol concentrations had reached natural levels. The half-life for methanol in the body was 10 times that for ethanol, and the breakdown of the methanol coincided with the timing of the unpleasant clinical symptoms of a hangover.

Jones who now heads the department of alcohol research at the National Laboratory of Forensic Chemistry in Linkoping, Sweden, said that toxic metabolites of methanol breakdown were most likely to account for the clinical symptoms of a hangover. These metabolites include formaldehyde and formic acid. "If the body could be prevented from breaking down methanol then there would be no toxic metabolites and no hangover," he said.

Jones said that hepatic alcohol dehydrogenase (ADH) isoenzymes break down methanol in the body. Because his drug 4-MP is a potent inhibitor of these enzymes, it should cure hangovers, he said.

Jones's hypothesis may help to explain some popular beliefs about the ill effects of excess drinking. For instance, the "hair of the dog", a drink the next morning, is said to be a short-term cure for a hangover. "It works," says Jones "because the drink lifts levels of ethanol in the blood stream. The ADH isoenzymes have a higher affinity for ethanol so they switch from degrading methanol. However, it only postpones the inevitable hangover he said. Once the ethanol is metabolised the enzymes return to work on the methanol. It would also explain why some people get terrible hangovers while others never suffer," said Jones. "The ADH isoenzyme pattern varies from person to person and is known to be genetically determined. People who suffer vile hangovers probably have isoenzymes with a higher affinity for methanol as a substrate so they produce more formaldehyde and formic acid," he said.

Jones advises hangover-prone individuals to avoid drinks that contain relatively more methanol. Cognac is an example. "If they must drink they should drink vodka. It's the purest alcoholic beverage you can buy, the nearest thing to pure ethanol," he said.

By Ian Mason
Source: English for Health Professionals class materials

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