

Drug points

Hepatitis associated with Kava, a herbal remedy for anxiety

Monica Escher, Jules Desmeules, Division of Clinical Pharmacology and Toxicology, Emile Giostra, Division of Gastroenterology, Gilles Mentha, Division of Visceral Surgery, Geneva University Hospital, 1211 Geneva 14, Switzerland

Kava, the rhizome of the pepper plant *Piper methysticum*, has been widely used in the South Pacific as a narcotic drink. Lactones, the major constituents of kava, are considered to be pharmacologically active and are sold in Europe and the United States as standardised extracts for anxiety and tension.

A 50 year old man presented to his doctor because of jaundice. He had noticed fatigue for a month, a "tanned" skin, and dark urine. The medical history was unremarkable apart from slight anxiety, for which he had been taking three to four capsules of kava extracts daily for two months (maximum recommended dose three capsules) corresponding to a dose of 210-280 mg lactones (Laitain, Schwabe, Switzerland). He took no other drugs and did not consume alcohol. Liver function tests showed a 60-fold and 70-fold increase in aspartate aminotransferase and alanine aminotransferase concentrations, respectively. Alkaline phosphatase concentration was 430 IU/l (normal range 30-125), γ -glutamyltransferase 691 IU/l (9-35), lactate dehydrogenase 1132 IU/l (125-240), and total and conjugated bilirubin 279.2 μ mol/l (6.8-25) and 212.3 μ mol/l (1.7-8.6), respectively. Prothrombin time was 25%. The patient was admitted to hospital. Ultrasonography showed a slight increase in liver size but no ascites or portal vein thrombosis. Blood tests for hepatitis A, B, C, and E, HIV, cytomegalovirus, and Epstein-Barr virus gave negative results. The patient's condition deteriorated within 48 hours. He developed stage IV encephalopathy and had to be intubated. Prothrombin

time was then 10%. The patient received a liver transplant two days later. He recovered uneventfully. On examination the liver was atrophic, and the subhepatic and portal veins were free. Histology showed extensive and severe hepatocellular necrosis and extensive lobular and portal infiltration of lymphocytes and numerous eosinophils.

Heavy consumption of kava has been associated with increased concentrations of γ -glutamyltransferase, suggesting potential hepatotoxicity.¹ A case of recurring necrotising hepatitis has been reported.² In our patient a relation between ingestion of kava and fulminant hepatic failure is supported by the chronology, histological findings, and exclusion of other causes of hepatitis. Assessment of causality according to the definitions of the World Health Organization is probable. Acute liver failure with a fatal outcome or that necessitates liver transplant has been attributed to various herbal preparations.³⁻⁵ This case illustrates the importance of inquiring about the use of over the counter health products. It was reported to the Swiss Pharmacovigilance Center in Berne.

Competing interests: None declared.

- 1 Mathews JD, Riley MD, Fejo L, Munoz E, Milns N, Gardner ID, et al. Effects of the heavy usage of kava on physical health: summary of a pilot survey in an Aboriginal community. *Med J Aust* 1988;148:548-55.
- 2 Strahl S, Ehret V, Dahm HH, Maier KP. Necrotizing hepatitis after taking herbal medication. *Dtsch Med Wschr* 1998;123:1410-14. (In German.)
- 3 Mostefa-Kara N, Pauwels A, Pines E, Biour M, Levy VG. Fatal hepatitis after herbal tea. *Lancet* 1992;340:674.
- 4 Yoshida EM, McLean CA, Cheng ES, Blanc PD, Somberg KA, Ferrell LD, et al. Chinese herbal medicine, fulminant hepatitis, and liver transplantation. *Am J Gastroenterol* 1996;91:2647-8.
- 5 Sheikh NM, Philen RM, Love LA. Chaparral-associated hepatotoxicity. *Arch Intern Med* 1997;157:913-9.

When I use a word ... Addressing the issue

"address (v) 1 write someone's name on (envelope or parcel). 2 speak formally to, direct one's remarks to. 3 think about and begin to deal with. 4 (golf) prepare to hit (the ball)."¹

Address in its third sense has joined "involve" as a "lazily overused"² verb that "makes it the delight of those who dislike the effort of searching for the right word"³ or "the trouble of precise thought."⁴ Searching *bmj.com* for "addresses" or "addressing" mines a rich seam. There is almost nothing that cannot be addressed: arguments, definitions, expectations, gaps, inequalities, representativeness, risks, shortages, threats, variations, and even what is right and what is wrong.

What is wrong with all these uses of address is that we do not know what the writers intend. When arguments are addressed, are they defined, considered, accepted, or countered? Are expectations being described, denied, or realised? Are variations being analysed, categorised, or reduced? Most popular for addressing are issues and questions, which is an even higher level of vagueness because the issue or question will be one of definitions, expectations, gaps, inequalities, and so on. If a question is addressed, is it framed, asked, or answered? Any word has to be treated with suspicion if context or motive can switch its meaning between "ask" and "answer".

Sometimes, address is not needed at all: "only the *t* test ... addresses a comparison of arithmetic means" means simply "the *t* test compares arithmetic means."

In the retrieved issues of *bmj.com*, the verb address was used for its precise meanings just twice in 92 uses: once for addressing a conference and once for a consideration of Mr or Dr being the correct way to address a surgeon. Given the popularity of the golf course as a place of recreation for doctors, perhaps it is surprising it was never used for its other precise meaning.

Neville W Goodman *consultant anaesthetist, Bristol*

- 1 *Concise Oxford dictionary*, 10th ed. Oxford: Oxford University Press, 1999.
- 2 Greenbaum S, Whitcut J. *Longman guide to English usage*. Marlow: Longman, 1988.
- 3 Gowers E. *The complete plain words*, 3rd ed. Revised S Greenbaum, J Whitcut. London: HMSO, 1986.
- 4 *Fowler's modern English usage*. Revised W Gowers. Oxford: Clarendon Press, 1965.

We welcome articles of up to 600 words on topics such as *A memorable patient*, *A paper that changed my practice*, *My most unfortunate mistake*, or any other piece conveying instruction, pathos, or humour. If possible the article should be supplied on a disk. Permission is needed from the patient or a relative if an identifiable patient is referred to. We also welcome contributions for "Endpieces," consisting of quotations of up to 80 words (but most are considerably shorter) from any source, ancient or modern, which have appealed to the reader.