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Chi R Yun

Updated: January 23, 2017.

OVERVIEW

Introduction

Chi R Yun is the Chinese proprietary name for extracts of Breynia officinalis, which has been used as an herbal medication alone and in combination with other botanicals to treat a variety of conditions including heart failure, venereal disease, growth retardation, contusions and conjunctivitis. Taken in higher than recommended doses, breynia is considered a poison and can cause gastrointestinal, hepatic, urinary and respiratory injury.

Background

Breynia officinalis is a species of Euphorbiaceae, which is known by the Chinese name of "Chi R Yun" which means "7 days of dizziness." It is used frequently in combination with other herbs in low doses to treat venereal disease, contusions, heart failure, growth retardation and conjunctivitis. In higher doses, it is considered a poison and results in neurological, gastrointestinal, urinary and respiratory toxicity.

Hepatotoxicity

Breynia overdose or poisoning causes diarrhea, nausea, fever, abdominal discomfort, palpitations, dry mouth and vertigo. Liver tests are also commonly abnormal in a dose related manner, with prominent elevations in serum aminotransferase levels and either no or minor increases in bilirubin and alkaline phosphatase levels. The liver injury is usually overshadowed by gastrointestinal symptoms, although laboratory abnormalities may persist longer than clinical symptoms for up to 1 to 2 months. Other systemic symptoms and complications that are usually present include dizziness, headache, lethargy, numbness, muscle weakness, respiratory symptoms, cough, hemoptysis, hematuria and bloody stools. The symptoms and liver test abnormalities generally resolve within 4 to 6 weeks of the exposure. Most reports have been from Asia and published in the early years of the 21st century.

Mechanism of Injury

The toxic components of Breynia include several phytotoxins and the liver injury appears to be a direct hepatotoxicity.

Outcome and Management

Hepatotoxicity from Breynia officinalis is usually self-limiting and should be managed with supportive care.

Drug Class: Herbal and Dietary Supplements; Chinese and Other Asian Herbal Medicines

PRODUCT INFORMATION

REPRESENTATIVE TRADE NAMES

Chi R Yun – Generic

DRUG CLASS

Herbal and Dietary Supplements

CHEMICAL FORMULA AND STRUCTURE

DRUG	CAS REGISTRY NUMBER	MOLECULAR FORMULA	STRUCTURE
Chi R Yun	Not Available	Herbal mixture	Not applicable

ANNOTATED BIBLIOGRAPHY

References updated: 23 January 2017

Zimmerman HJ. Unconventional drugs. Miscellaneous drugs and diagnostic chemicals. In, Zimmerman, HJ. Hepatotoxicity: the adverse effects of drugs and other chemicals on the liver. 2nd ed. Philadelphia: Lippincott,1999: pp. 731-4.

(Expert review of hepatotoxicity published in 1999; hepatotoxicity of Asian herbal products and teas are discussed generally without focus on any specific product or herb).

Seeff L, Stickel F, Navarro VJ. Hepatotoxicity of herbs and dietary supplements. In, Kaplowitz N, DeLeve LD, eds. Drug-induced liver disease. 3rd ed. Amsterdam: Elsevier, 2013, pp. 631-58.

(Review of hepatotoxicity of herbal and dietary supplements [HDS]; Chinese and other Asian herbal medicines and teas are discussed, including Breynia).

Stedman C. Herbal hepatotoxicity. Semin Liver Dis 2002; 22: 195-206. PubMed PMID: 12016550.

(Review and description of patterns of herbal-induced liver injury, including discussion of potential risk factors, and herb-drug interactions).

Ernst E. Adulteration of Chinese herbal medicines with synthetic drugs: a systematic review. J Intern Med 2002; 252: 107-13. PubMed PMID: 12190885.

(Systematic review of literature on adulteration of herbals with conventional medications, in 15 case reports and 2 cases series of 21 patients; included NSAIDs, corticosteroids, benzodiazepines, diuretics and antidiabetic medications, in up to 24% of products).

Lin TJ, Tsai MS, Chiou NM, Deng JF, Chiu NY. Hepatotoxicity caused by Breynia officinalis. Vet Hum Toxicol 2002; 44: 87-8. PubMed PMID: 11931510.

(Two women ages 43 and 51 years took large amounts of Breynia [one in suicide attempt] and rapidly developed vertigo, vomiting, headache and numbness [peak bilirubin 2.2 and 1.0 mg/dL, ALT 2443 and 2730 U/L, Alk P 103 and 107 U/L], resolving over the next 4 to 6 weeks).

Lin TJ, Su CC, Lan CK, Jiang DD, Tsai JL, Tsai MS. Acute poisonings with Breynia officinalis—an outbreak of hepatotoxicity. J Toxicol Clin Toxicol 2003; 41: 591-4. PubMed PMID: 14514003.

(Breynia officinalis is used in many Chinese medicines, but it also contains a poison and the plant can be mistaken for other herbs; 19 Chinese villagers drank a soup made from Breynia and developed diarrhea, nausea and liver test abnormalities [peak bilirubin 1.5-2.6, ALT 65-7398 U/L, Alk P 269 U/L], returning to normal in 1-2 months).

Wai CT, Tan BH, Chan CL, Sutedja DS, Lee YM, Khor C, Lim SG. Drug-induced liver injury at an Asian center: a prospective study. Liver Int 2007; 27: 465-74. PubMed PMID: 17403186.

(Prospective survey of drug induced liver injury presenting over 26 months at a single hospital in Singapore identified 31 cases, ages 18-90 years, 55% male, Chinese traditional medicines being implicated in 17 [55%] and Malay agents in 5 cases [16%], adulterants were found in 9 of 31 tested traditional agents [codeine, corticosteroids, metformin, mercury, nonsteroidal antiinflammatory agents]).

García-Cortés M, Borraz Y, Lucena MI, Peláez G, Salmerón J, Diago M, Martínez-Sierra MC, et al. Liver injury induced by "natural remedies": an analysis of cases submitted to the Spanish Liver Toxicity Registry. Rev Esp Enferm Dig 2008; 100: 688-95. PubMed PMID: 19159172.

(Among 521 cases of drug induced liver injury submitted to Spanish registry, 13 [2%] were due to herbals, none attributed to Breynia).

Chalasani N, Fontana RJ, Bonkovsky HL, Watkins PB, Davern T, Serrano J, Yang H, Rochon J; Drug Induced Liver Injury Network (DILIN). Causes, clinical features, and outcomes from a prospective study of drug-induced liver injury in the United States. Gastroenterology 2008; 135: 1924-34. PubMed PMID: 18955056.

(Among 300 cases of drug induced liver disease in the US collected between 2004 and 2008, 9% of cases were attributed to herbal medications; Breynia not listed).

Navarro VJ. Herbal and dietary supplement hepatotoxicity. Semin Liver Dis 2009; 29: 373-82. PubMed PMID: 19826971.

(Overview of the regulatory environment, clinical patterns, and future directions in research with HDS including traditional Chinese herbal medicines; breynia not discussed).

Wang YP, Shi B, Chen YX, Su J, Jiang CF, Xie WF. Drug-induced liver disease: an 8 year study of patients from one gastroenterological department. J Digest Dis 2009; 10: 195-200. PubMed PMID: 19659787.

(30 patients with drug induced liver disease seen at a single medical university in Shanghai between 2000 and 2008, of which 12 were attributed to Chinese herbs, but specific agents not discussed, 9 were jaundiced, 6 hepatocellular, 3 cholestatic and 2 mixed).

Teschke R, Wolff A, Frenzel C, Schulze J, Eickhoff A. Herbal hepatotoxicity: a tabular compilation of reported cases. Liver Int 2012; 32: 1543-56. *(Systematic* PubMed PMID: 22928722.

tabulation of the literature on hepatotoxicity of herbals does not list or discuss Chi R Yun or Breynia).

Bunchorntavakul C, Reddy KR. Review article: herbal and dietary supplement hepatotoxicity. Aliment Pharmacol Ther 2013; 37: 3-17. PubMed PMID: 23121117.

(Review of HDS associated hepatotoxicity does not discuss Chi R Yun or Breynia officinalis).

Navarro VJ, Barnhart H, Bonkovsky HL, Davern T, Fontana RJ, Grant L, Reddy KR, et al. Liver injury from herbals and dietary supplements in the U.S. Drug-Induced Liver Injury Network. Hepatology 2014; 60:1399-408. PubMed PMID: 25043597.

(Among 85 cases of HDS associated liver injury enrolled in a US prospective study between 2004 and 2013, neither Chi R Yun or Breynia officinalis were implicated in any).

Chalasani N, Bonkovsky HL, Fontana R, Lee W, Stolz A, Talwalkar J, Reddy KR, et al.; United States Drug Induced Liver Injury Network. Features and outcomes of 899 patients with drug-induced liver injury: The DILIN Prospective Study. Gastroenterology 2015; 148: 1340-52. PubMed PMID: 25754159.

(Among 899 cases of drug induced liver injury enrolled in a U.S. prospective database between 2004 and 2012, HDS were implicated in 145 [16%] cases, but none were attributed to Chi R Yun or Breynia officinalis).