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Herbal Drug Induced Acute Fulminant Hepatic Failure

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ABSTRACT

The use of Herbal medications and dietary herbal supplements are widely increasing for various health benefits in which majority of them are scientifically not proven. Herbal medications are poorly standardized and easily obtainable. Herbal and ayurvedic drugs are being falsely believed to be safe, harmless and minimal side effects. Cases of herbal drug induced hepatocellular damage are being widely reported across the world

An extensive retrospective review of 313 DILI cases from India over a 12-year span (1997-2008) revealed an overall mortality of17.3%, which was mostly attributed to the usage of anti-tuberculosis drugs. Only 1.3% of cases—mostly those treated with Ayurvedic medicines—were linked to HDS. Nevertheless, 50% of the patients with HDS-related DILI passed away. Despite HDS's growing popularity in India, the authors hypothesized that the higher mortality seen may be related to the fact that HDS are increasingly administered after the development of jaundice from viral hepatitis. Additionally, individuals who have HDS that has been contaminated with lead and arsenic more frequently than those who have hepatitis manifest with constitutional and neurological symptoms.

For the purposes of this study, HDS refers to any practices classified as traditional, alternative, or supplementary in the West as well as Unani, Ayurveda, Kampo, and Traditional Chinese Medicine in Africa and Asia (15).

Key words: Acute kidney injury, Immunosuppressant's, Steroids, Antibiotics

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INTRODUCTION

Ayurvedic/ Herbal drug induced acute liver failure is an increasing health concern across the world. Though the incidence of unknown drug induced acute fulminant liver failure is very rare it is still a rising concern Our patient who had history of consumption of unknown ayurvedic medication and developed liver failure and ended up in hepatic encephalopathy. Drug induced liver injury was diagnosed by exclusion of the other known causes for acute liver failure. 20% to 40% of ALF from DILI is attributed to the use of herbal drugs, according to acute liver failure study groups throughout the world [1-4].

CASE REPORT

34-year-old male patient came to the ER in drowsy state, not responding to oral command with complaints of decreased food intake and vomiting since past 2 days. Complaints of fever since past 1 week. History of altered sensorium and inappropriate speech since past 2 days. History of increased day time drowsiness since past 3 days. Patient attenders denied any history of vomiting, altered bowel habits, Patient is a known smoker for past 10 years. Patient has no known comorbidities. Patient was on ayurvedic medication for GERD for past 2 years. No prior history of any drug misuse.

Examination

On examination patient was moderately built and nourished. Patient was febrile, icteric, drowsy, not responding to oral commands. No pallor, no cyanosis, no clubbing, no pedal oedema. Neck stiffness was present. His cardiovascular, respiratory and central nervous systems were normal. His pulse rate was 124/min; BP was 140/90mmhg and temperature 100°F.

Investigations

Routine investigations were done. His WBC count was 6560, platelet count 1,00,000. Liver enzymes were elevated with serum total bilirubin of 16.8 and direct bilirubin being 11.9, SGOT was 336, SGPT- 992, ALP- 258 and GGT was 135. INR was 3.32, aPTT was 60.4. urea level was 48 and creatinine levels being 0.9. Peripheral

smear picture showed toxic changes. Serum ammonia was 277. Blood for toxicological findings came out to be negative for heroin, TCA, cannabinoid, codeine, morphine, methyl amphetamine, methadone, cocaine, amphetamine and phencyclidine. Procalcitonin levels were elevated. All viral markers were negative and blood culture and urine culture showed no growth. Fibrinogen levels were normal. CT brain was suggestive of diffuse cerebral oedema. Echo revealed normal cardiac function with EF of 59%.

Management

Patient was started on empirical antibiotic therapy and antivirals and anti-malarial therapy and other supportive medications for fulminant hepatitis with hepatic encephalopathy. As all other possible cause for acute liver failure were ruled out a diagnosis of fulminant liver failure secondary to consumption of an unknown ayurvedic medicine was made. Patients liver enzymes and coagulation profile improved by a slight margin but patient failed to regain consciousness. Patient had desaturation and was started on mechanical ventilation. Patient developed hypotension and developed cardiac arrest and expired despite all resuscitative measures.

DISCCUSION

Medication-induced liver damage is highly prevalent, and practically all drug classes can harm the liver. It is important to identify the drug and remove it as early as possible in order to limit the growth of chronic liver disease. Hepatotoxicity can be an effect of direct toxicity of the drug or can be sue to its toxic metabolites or due to any autoimmune mediated mechanisms. Herbal/ ayurvedic medications have been widely used for many conditions and have been widely reported for causing hepatotoxicity as there are no standard guidelines or specific regulations for their composition. Many cases of herbal medicine induced hepatotoxicity have been reported across the world. For Herbalife® products, a significant case of herbal toxicity has been documented. It's interesting to note that Herbalife consumption has caused various types of liver damage, including one instance of fulminant hepatic failure. More investigation found that Bacillus subtilis contamination was believed to be the cause of Herbalife' s liver damage. 2 It is surprising that Spirulina, which is used for a variety of preventive benefits, was also linked to one instance of DILI.

Although prospective studies have indicated an incidence of severe DILI caused by HDS use of up to 3 cases per 100,000/year in the West, rates are greater in Asia. However, it can be challenging to estimate the proportion of patients who will develop DILI due to HDS use because it is not always clear how many users there are.

The drug induced liver injury is diagnosed by relating the history of drug exposure and development of signs and symptoms of liver damage and by excluding the other causes of liver injury like infectious causes, autoimmune causes or other toxin induced liver damage. The identification of pattern of liver damage like hepatocellular, cholestatic or mixed pattern of damage is made by raise in hepatic enzymes (Table 1) [1-15].

Table 1: Types of drug induced liver injury.

Types	Enzymatic profile	Prognosis
Hepatocellular	ALT >2ULN	More severe prognosis
	Serum ALT/Serum Alk	
	Phos ≥ 5*	
Cholestatic	Alk Phos 2ULN	More prone to chronic diseases
	Serum ALT/Serum Alk	
	Phos ≤ 5*	
Mixed	ALT >2ULN	More prone to chronic diseases
	Serum ALT/serum Alk	
	Phos between 2 and 5*	

CONCLUSION

Most cases of drug induced hepatotoxicity are benign in nature and must be withdrawn before the progression of fulminant hepatic failure. The fastest medication withdrawal possible is combined with supportive care designed to reduce uncomfortable symptoms in the treatment of drug-and herbal-induced liver damage.

REFERENCES

1. Schoepfer AM, Engel A, Fattinger K, et al. Herbal does not mean innocuous: ten cases of severe hepatotoxicity associated with dietary supplements from Herbalife® products. J Hepatol 2007; 47:521-526.
2. Stickel F, Droz S, Patsenker E, et al. Severe hepatotoxicity following ingestion of Herbalife® nutritional supplements contaminated with Bacillus subtilis. J Hepatol 2009; 50:111-117.
3. Sandhu N, Navarro V. Drug-induced liver injury in GI practice. Hepatol Commun 2020; 4:631-645.
4. Grewal P, Ahmad J. Severe liver injury due to herbal and dietary supplements and the role of liver transplantation. World J Gastroenterol 2019; 25:6704.
5. Hamilton LA, Collins-Yoder A, Collins RE. Drug-induced liver injury. AACN Adv Crit Care 2016; 27:430-440.
6. Published in final edited form as:US Gastroenterol Hepatol Rev. 2010 Jan 1; 6: 73–80
7. Suk KT, Kim DJ, Kim CH, et al. A prospective nationwide study of drug-induced liver injury in Korea. Am J Gastroenterol 2012; 107:1380-1387.
8. Antoine DJ, Williams DP, Park BK. Understanding the role of reactive metabolites in drug-induced hepatotoxicity: State of the science. Expert Opin Drug Metab Toxicol 2008; 4:1415-1427.
9. Park BK, Kitteringham NR, Maggs JL, et al. The role of metabolic activation in drug-induced hepatotoxicity.

Annu Rev Pharmacol Toxicol 2005; 45:177-202.

10. Wu D, Cederbaum AI. Oxidative stress and alcoholic liver disease. In Seminars in Liver Dis 2009; 29:141-154.
11. Zimmerman HJ, Maddrey WC. Acetaminophen (paracetamol) hepatotoxicity with regular intake of alcohol: analysis of instances of therapeutic misadventure. Hepatology 1995; 22:767-773.
12. Berson AL, Renault SA, Letteron PH, et al. Uncoupling of rat and human mitochondria: A possible explanation for tacrine-induced liver dysfunction. Gastroenterol 1996; 110:1878-1890.
13. Fromenty B, Pessayre D. Inhibition of mitochondrial beta-oxidation as a mechanism of hepatotoxicity. Pharmacol Ther 1995; 67:101-154.
14. Setzer B, Lebrecht D, Walker UA. Pyrimidine nucleoside depletion sensitizes to the mitochondrial hepatotoxicity of the reverse transcriptase inhibitor stavudine. Am J Pathol 2008; 172:681-690.
15. Devarbhavi H, Dierkhising R, Kremers WK, et al. Single-center experience with drug-induced liver injury from India: Causes, outcome, prognosis, and predictors of mortality. Am J Gastroenterol 2010; 105:2396-2404.