

Fatal herb senna: A case report

ABSTRACT

Due to its laxative effects, senna (*Cassia angustifolia*) has been used frequently in our country and the whole world. We aimed to present a case in which a probable hepatotoxicity and death occurred because of senna used in large quantities for a long time due to its laxative effects.

A sixty years old female patient admitted our emergency service with the complaints of weakness, abdominal pain and distension ongoing for about three days. She expressed that she had drunk a kind of tea made of senna for the treatment of her chronic constipation a long time and especially in the last month mostly.

According to anamnesis, physical examination and investigations, we concluded that our patient may have toxic hepatitis due to consuming a large amount of senna recently for her chronic constipation. We consulted the patient to gastroenterology and organ transplantation service. She was followed for multiple organ failure, but did not respond to the interventions and died before liver transplantation.

It mustn't be forgotten that when used in an uncontrolled way, senna which is used as a laxative by people and easily reachable, can cause toxic hepatitis and also death.

Key words: Senna; hepatotoxicity; death.

1. INTRODUCTION

Senna (*Cassia angustifolia*) is a plant that has frequently been used in our country and whole world for its laxative effect [1,2]. It has this effect by changes in colonic motility, alter colonic

23 absorption and fluid secretion through sennasoids which senna contains [1]. It's known that
24 senna when consumed for a long time and in large amounts has many adverse effects, a rare
25 of which is hepatotoxicity [2,3]. In our case presentation, we aimed to present a case in which
26 a probable hepatotoxicity and death occurred because of senna used in large quantities for a
27 long time due to its laxative effects.

28 **2. THE CASE**

29 A sixty year old female patient admitted to our emergency service with the complaints of
30 malaise, abdominal pain and distension for about three days. No illnesses were present in her
31 history. She expressed drinking senna tea for a long time, in large quantities especially in the
32 last months, for chronic constipation (Figure 1). She denied any medication usage and
33 drinking alcohol or smoking. In physical examination, blood pressure 90/60 mmHg, pulse rate
34 110beats/minute, temperature 37°C and SPO₂ 98% by pulse-oximeter in room air. We
35 recognized generalized abdominal tenderness but no rebound and defense in abdominal
36 examination. The results of the blood samples which were taken firstly in emergency service
37 were leukocyte number (WBC) 29,600/ml, platelet number 130,000/ml, C-reactive protein
38 (CRP) 4.62 mg/dl, International normalized ratio (INR) 3.3, creatinine 4.29 mg/dl, urea 37
39 mg/dl, aspartate aminotransferase 8827 U/L, alanine aminotransferase 4011 U/L, lactate
40 dehydrogenase (LDH) 9214 U/L. Viral hepatitis markers (Hepatitis A,B,C) and HIV were
41 negative. On the ultrasound report there was wide spread free fluid (ascites) especially
42 perihepatic and perisplenically, also hepatic arteries prominent but no blood flowing in
43 hepatic veins. We suspected portal vein thrombosis and got abdominal computerized
44 tomography (CT) on the same day. Abdominal CT report showed there was no portal vein
45 thrombosis, but free fluid and decreased liver parenchymal density.

46 We thought the case having toxic hepatitis due to senna tea and consulted the patient to
47 gastroenterology and organ transplantation service. She was hospitalized in intensive care unit
48 with the aim of liver transplantation. The patient who was hospitalized as conscious and
49 having fifteen Glasgow Coma Scale (GCS) was intubated electively after she lost
50 consciousness and having dyspnea in two hours. Then the patient got worse clinically day by
51 day. She got therapy for multiorgan failure, but didn't respond the treatment and died on the
52 eighth day in intensive care unit before transplantation.

53 3. DISCUSSION

54 Constipation is a major health problem that occurs more frequently with age and affects the
55 life comfort excessively. Functional constipation, without specific etiology, forms a
56 considerable part of this problem. Senna is among the main herbal laxatives used to solve this
57 problem [4]. It was introduced in treatment by the Arabs in the 9th century and
58 pharmacological investigation on senna started in the 20th century [5]. Senna is detected as the
59 most common used plant in herbal teas marketed in Turkey [2].

60 Sennosides are the main components of senna and rheinanthrone is active metabolite which is
61 produced from sennasoids by the bacteria of the colon [6]. This metabolite shows laxative
62 effect by changes in colonic motility, absorption and secretion resulting fluid accumulation
63 [1]. Direct inhibition of the Na/K ATPase system prevents the absorption of sodium and water
64 from the bowel lumen into the circulation [1]. In our case, the patient expressed that she drank
65 senna tea especially excessively in the last month against her constipation problem to get
66 maximum laxative effect.

67 Senna is normally advised in acute constipation for a short time use, but it can cause many
68 adverse effects such as myasthenia, tetany, anemia, greasy stool, gastrointestinal hemorrhage,

69 renal failure, hyperaldosteronism, cachexia, and hepatitis in long time use for chronic
70 constipation [2]. Many adverse effects are connected with laxative effect. In the literature
71 portal vein thrombosis associated with Senna was also reported [1].

72 Chronic ingestion of very large amounts of senna may be related to hepatotoxicity [7-9].
73 However, hepatotoxicity associated with senna is rare [3]. The cause of hepatotoxicity related
74 to senna may be uncertain but can be explained by the exposure of the liver to abnormal
75 quantities of toxic metabolites of anthraquinone glycosides [1]. According to anamnesis,
76 physical examination and investigations, we concluded that our patient may have toxic
77 hepatitis due to consuming a large amount of senna recently for her chronic constipation.
78 Additionally in our case, we suspected for portal vein thrombosis according to USG report,
79 but the abdomen CT didn't supported it.

80 **4. CONCLUSION**

81 It mustn't be forgotten that when used in an uncontrolled way, senna which is used as a
82 laxative by people and easily reachable, can cause toxic hepatitis and also death.

83 **CONSENT**

84 All authors declare that written informed consent was obtained from the patient for
85 publication of this case report.

86 **REFERENCES**

- 87 1. Soyuncu S, Cete Y, Nokay AE. Portal vein thrombosis related to *C.angustifolia*.
88 Clinical toxicology 2008;46:774-7.

2. Saraçoğlu A, Ergun B. Composition of some herbal slimming tea preparations marketed in Turkey and their possible adverse effects. *Turkiye Klinikleri J Med Sci* 2006;26:355-63.
3. Abdualmjid RJ, Sergi C. Hepatotoxic botanicals-an evidence-based systematic review. *J Pharm Pharm Sci* 2013;16:376-404.
4. Shafe AC, Lee S, Dalrymple JS, Whorwell PJ. The LUCK study: Laxative Usage in patients with GP-diagnosed Constipation in the UK, within the general population and in pregnancy. An epidemiological study using the General Practice Research Database (GPRD). *Therapeutic advances in gastroenterology* 2011;4:343-63.
5. Lemli J. Senna – an old drug in modern research. *Pharmacology* 1988;36:3-6.
6. Lemli J. Metabolism of sennosides--an overview. *Pharmacology* 1988;36:126-8.
7. Stickel F, Seitz HK, Hahn EG, Schuppan D. Liver toxicity of drugs of plant origin. *Z Gastroenterol* 2001;39:225-32, 234-7.
8. Vanderperren B, Rizzo M, Angenot L, Haufried V, Jadoul M, Hantson P. Acute liver failure with renal impairment related to the abuse of senna anthraquinone glycosides. *Ann Pharmacother* 2005;39:1353-7.
9. Sonmez A, Yilmaz MI, Mas R, Ozcan A, Celasun B, Dogru T, Taslipinar A, Kocar IH. Subacute cholestatic hepatitis likely related to the use of senna for chronic constipation. *Acta Gastroenterol Belg* 2005;68:385-7.

Legends of the figures

Figure 1. Senna tea leaves



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