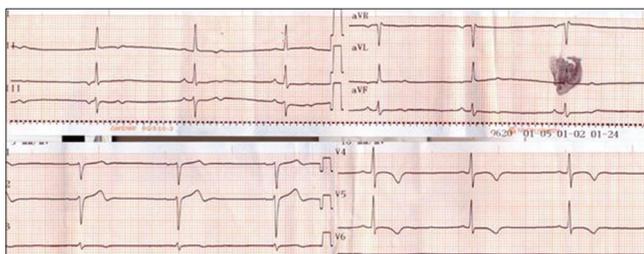


## Electrocardiographic ST segment changes due to the mad honey intoxication

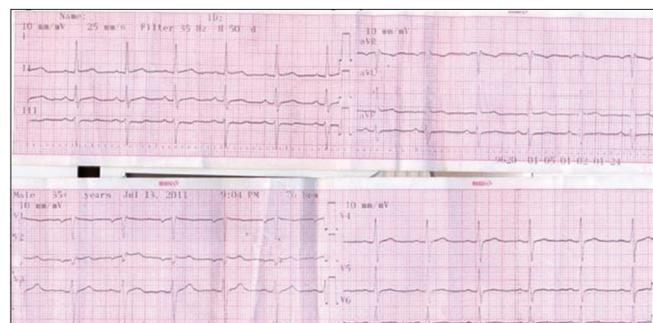
Sir,

Almost all cases of mad honey poisoning have been reported from Turkey. This honey is also used as an alternative treatment method for gastrointestinal disorders, hypertension, coronary heart disease and to improve sexual activity. Grayanotoxins are produced by plants *Rhododendron* genus.<sup>[1]</sup> Grayanotoxin (Andromedotoxin), contained in mad honey, should primarily impacts gastrointestinal system but also cardiovascular system side effects are also observed.<sup>[1,2]</sup> Typical symptoms of mad honey poisoning are usually on gastrointestinal system. Cardiac side effects such as bradycardia and hypotension are often seen. In this paper, we wish to present a case presented with nausea, vomiting, dizziness, blurred vision complaints and dynamic T wave changes on Electrocardiography (ECG) after ingestion of mad honey. 58 year old male patient was admitted to the emergency department with complaints of nausea, vomiting, dizziness, blurred vision which had begun half an hour after eating honey brought from the Black Sea region in Turkey. The physical examination was consistent with a heart rate of 41 beats per min, respiratory rate of 16/dk and blood pressure of 50/30 mm Hg, the other system examinations were normal. Sinus bradycardia and negative T waves in precordial leads was observed in his first electrocardiogram [Figure 1]. The patient is diagnosed as mad honey poisoning with the story of mad honey consumption by taking into



**Figure 1:** Sinus bradycardia and ST depression in precordial leads was observed in his first electrocardiogram

consideration the characteristic findings were evaluated. Parenteral hydration with normal saline was provided. 2 mg atropine was administered by intravenous (IV) route. During follow-up of conservatively treated patient, blood pressure and heart rate returned to normal limits, a normal sinus rhythm ECG with no T wave abnormalities was observed [Figure 2]. Routine laboratory examinations were normal and cardiac enzymes were not elevated at a 12 hrs follow-up. Echocardiographic examination revealed normal systolic and diastolic functions with no significant valvular dysfunction. Follow-up of 24 hrs monitoring of patient, normal vital signs and laboratory tests were observed and he was discharged uneventfully. Typical symptoms of mad honey poisoning are usually on gastrointestinal system. Cardiac side effects such as bradycardia and hypotension often seen.<sup>[2,3]</sup> However, atrial fibrillation, AV block, myocardial infarction due to the mad honey were also reported in the literature.<sup>[4,5]</sup> The main toxin responsible for the cardiac effects of mad honey poisoning was grayanotoxin (GT)-I. In addition, the GT-II is capable of spontaneous pulse inhibition on sinoatrial node. Grayanotoxin shows the effect of binding to sodium channels in cell membranes. Despite the presence of alarming findings of mad honey poisoning, the symptoms are sufficient to remedy the situation with supportive care consisting of saline infusion, intravenous atropine treatment and electrocardiographic monitoring.<sup>[1]</sup> In our case, a half-hour after eating a spoonful of honey produced in the Black Sea region, signs of toxicity was started. Acute coronary syndrome were thought to be due to sinus bradycardia and dynamic T wave changes, but no pathological enzyme elevation and chest pain was observed so this diagnosis is excluded. In conclusion, mad honey poisoning should be considered in the differential diagnosis with the existence of unexplained bradycardia, hypotension and electrocardiographic



**Figure 2:** Normal sinus rhythm electrocardiography with no ST segment depression was observed

changes in healthy patients without a history of drug use and any heart disease.

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## References

1. Gunduz A, Bostan H, Turedi S, Nuhoglu I, Patan T. Wild flowers and mad honey. *Wilderness Environ Med* 2007;18:69-71.
2. Gündüz A, Turedi S, Uzun H, Topbas M. Mad honey poisoning. *Am J Emerg Med* 2006;24:595-8.
3. Cakar MA, Can Y, Vatan MB, Demirtas S, Gunduz H, Akdemir R. Atrial fibrillation induced by mad honey intoxication in a patient with Wolf-Parkinson-White syndrome. *Clin Toxicol* 2011;49:438-9.
4. Dursunoglu D, Gur S, Semiz E. A case with complete atrioventricular block related to mad honey intoxication. *Ann Emerg Med* 2007;50:484-5.
5. Yildirim N, Aydın M, Cam F, Celik O. Clinical presentation of non-ST-segment elevation myocardial infarction in the course of intoxication with mad honey. *Am J Emerg Med* 2008;26:108.e1-2.

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<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.ijccm.org">www.ijccm.org</a>
	<b>DOI:</b> 10.4103/0972-5229.117084