

Jones S¹, Thomas AM¹, Vale JA², Eddleston M³, Thomas SHL⁴, Thompson JP¹

¹NPIS (Cardiff), Cardiff and Vale UHB, Cardiff, UK, ²NPIS (Birmingham), City Hospital, Birmingham, UK,

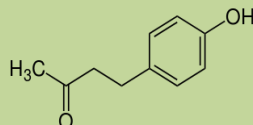
³NPIS (Edinburgh), Royal Infirmary, Edinburgh, UK⁴, NPIS (Newcastle), Regional Drug and Therapeutics Centre, Newcastle, UK

Objective

There are few published data regarding the toxicity of raspberry ketone (RK). This ingredient of the red raspberry (*Rubus idaeus*) has been marketed as a lipolytic agent and is taken to promote weight loss. Evidence for the safety of RK at the doses used in weight loss supplements is not available. RK is expected to have sympathomimetic activity based on its chemical structure. Takematsu et al (2013) reported insomnia, palpitations, sinus tachycardia and jitteriness in a 43 year old male who had taken RK for one month. We wished to determine the pattern of enquiries to the NPIS concerning RK.

Method

A retrospective review of telephone enquiries to the NPIS concerning RK from 1st January 2011 to 31st March 2014 was performed.



About raspberry ketone

The molecule is responsible for the smell of red raspberries.

Rodents fed a high calorie diet did not experience the expected degree of weight gain when administered raspberry ketone.

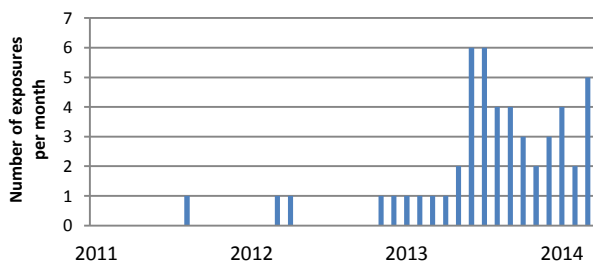
Synthesised raspberry ketone may be found in capsules, tablets and drops.

Although widely available, there have been no clinical trials so safety and efficacy in humans are uncertain.

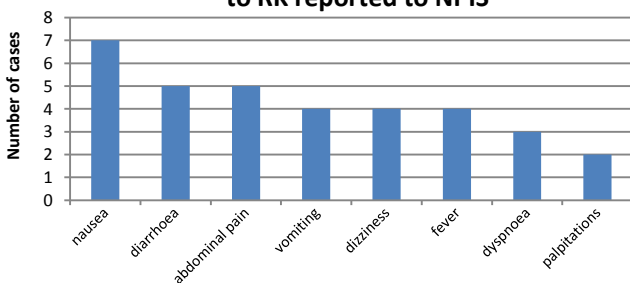
Results

The NPIS received 56 enquiries relating to 50 patient exposures. The number of exposures has increased from 1 in 2011 to 4 in 2012 and 34 in 2013, with a further 11 cases in the first quarter of 2014. Nineteen exposures (38%) involved patients aged between 15 and 24 years. Patients under the age of five years were involved in 17 cases (34%). Most patients (35/50) were female. Most exposures were accidental (n = 24, 48%), but there were also intentional ingestions (n = 12, 24%), adverse reactions (n = 6, 12%), therapeutic errors (n = 6, 12%) and recreational abuse (n = 2, 4%). Of the twenty seven patients who were symptomatic, twenty five (93%) were adults. Nineteen exposures (38%) were classified as minor in severity (Poisoning Severity Score (PSS) = 1), three (6%) were of moderate severity (PSS = 2) and three patients (6%) were severely poisoned (PSS = 3). Symptoms following ingestion included nausea (n = 7), diarrhoea (n = 5), abdominal pain (n = 5), vomiting (n = 4), dizziness (n = 4), temperature increase (n = 4), shortness of breath (n = 3) and palpitations (n = 2).

Exposures to Raspberry ketone supplements reported to NPIS 2011-2014



Frequency of features among 50 exposures to RK reported to NPIS



Discussion

Many commercially available weight loss supplements have not been thoroughly evaluated for efficacy or safety. These preparations typically contain numerous ingredients, may be poorly labelled and provide insufficient warning regarding adverse effects. The NPIS receives a small but increasing number of enquiries relating to exposure to slimming tablets containing raspberry ketone. Symptoms associated with products said to contain raspberry ketone ingestion appear similar to related stimulant agents. Consumers should be aware that the use of unregulated weight loss therapies claiming to be natural and safe is not without risk.