Energy drinks and visual health

Dear Sir,

Energy drinks (EDs) are in fashion due to sports and advertising campaigns that promote them as tasty alcohol-free stimulating recovery drinks. The most famous energy drink went from invoicing 2.3 billion dollars in 2011 to 3.433 billion in 2013. EDs include high amounts of caffeine (32 mg/100 ml, although some 250 ml drinks contain 80 mg, while 500 ml drinks have 160 mg), an alkaloid which acts on the nervous system exactly like psychoactive substances, producing dependency particularly in students who use these drinks for exams because caffeine increases the concentration of noradrenaline and dopamine in the prefrontal region of the brain, thus increasing concentration for studying. Even though some drinks are better known than others, all aim at increasing physical resistance and concentration, staying awake for long periods and making work less tiring. For these reasons they are usually taken by students, athletes (in this environment, these drinks are known as hypertonics) and young people in general.1

Quite recently, a 46-year-old patient visited the practice referring a bilateral “cloudy feeling” with one month of evolution which “occupied central vision”. The patient was not a smoker or drinker but he drank 5–6 energy drinks every day (100 ml with 32 mg of caffeine). Initial exploration produced a visual acuity of 0.9 in the right eye and 0.9 in the left eye, without afferent pupil defect or funduscopic alterations. Angiogram and color test were normal. The visual field was characterized by a bilateral circular scotoma surrounding central fixation. At the fourth month of follow-up, visual acuity remained good although campimetric defects persisted. As mentioned above, the patient was an avid consumer of EDs and visited the practice due to bilateral central scotoma associated to good vision. The suspected physiopathological mechanism was transient macular ischemia secondary to retinal-choroidal vasoconstriction.2 Kerrison et al.3 described nonprogressive central scotoma with good visual acuity in severe coffee drinkers, which he nicknamed as “coffee and donut maculopathy” and which nowadays could be defined as “energy drinkers’ maculopathy”. Even though dosage varies between individuals, it is recommended not to imbibe over 400 mg of caffeine per day, the equivalent of 4–5 daily cans of EDs. At a dose of 200 mg, caffeine diminishes macular flow and larger doses produce vasoconstriction.2 Toxicological emergencies on the rise in recent years include abuse of EDs due to the low perception of risk by consumers (IX Meeting on Clinical Toxicological Update, Barcelona). These drinks need not be forbidden but consumers should be aware about the consequences of abusing them.

REFERENCES


V.M. Asensio-Sánchez
Servicio de Oftalmología, Hospital Clínico Universitario, Valladolid, Spain
E-mail address: victor.asensio@orangemail.es

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