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Letter to the Editor

8-Methoxypsoralen-induced dysosmia

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To the Editor,

A wide range of drugs can give rise to a number of olfactory disorders, mainly cardiovascular drugs (ACE inhibitors, calcium channel blockers and β-blockers) and less frequently interferon, methotrexate, D-penicillamin and antibiotics (ciprofloxacin, doxycycline) (1). As far as we know, no case of trouble with methoxypsoralen (8-MOP) has ever been published. Herein is a report on a first case of dysosmia, probably induced by ingestion of 8-MOP.

A 21-year-old man without a notable past history was treated with systemic photochemotherapy (PUVA) for palmo-plantar psoriasis resistant to topical corticosteroids. This was his first cycle of phototherapy. The sessions took place at 2.00 p.m. three times a week. The dose of 8-MOP was 40 mg peroral, 2 h before irradiation. At 1 week after the initial therapy, the patient complained of olfaction disorders that were brought on by the ingestion of 8-MOP. When questioned, the patient claimed he had an unpleasant petrol smell occurring 2 h after the ingestion of 8-MOP. This dysosmia reached its peak between 5.00 and 6.00 p.m. corresponding to a time of 5–6 h after the ingestion, then it slowly regressed throughout the evening and disappeared around 10.00 p.m. No taste disorder was associated. The occurrences of this dysosmia coincided exactly with the dates of 8-MOP ingestion without any smell disorder on the other days. The patient also confirmed no other drug intake or chemical product handling. Both neurological and ENT examinations (including sinusal X-rays) were normal. Reduction of the dose of 8-MOP to 30 mg per session led to a decrease, as well as reduction to 20 mg led to their disappearance. A return to the initial dose (40 mg) led to the relapse of the dysosmia. Finally, three additional sessions with 20 mg were sufficient to obtain a remission of his palmo-plantar psoriasis.

To our knowledge, 8-MOP has never been associated with the occurrence of dysosmia. The sequence of events and the dose-dependent pattern of this case are the fundamental elements that led us to incriminate 8-MOP for the occurrence of the dysosmia. The olfactory system is composed of odorant receptors coupled with G proteins (G_{olf}) that activate adenylyl cyclase producing cAMP, leading to the penetration of calcium through cAMP gated-channels. Therefore, via calmodulin binding, calcium plays an important role in odor adaptation (2). It should be noted that antipsoriatic treatments have been demonstrated to interact with epidermic adenylyl cyclase and calmodulin (3, 4).

Since we conclude for this case that 8-MOP ranging from 30 to 40 mg per session may have interacted with one sequence of olfactory signal transduction creating a rapid setting and short life dysosmia, well suited with the peak plasma concentration of this drug obtained about 1–2 h after an oral dose, and its serum elimination half-life (in the order of 0.5–2 h) (5).

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