

Osmophobia and headache triggered by odors in patients with migraine and tension-type headache (abstract)

Osmofobia e odor como fator deflagrador de cefaleia em pacientes com migrânea e cefaleia do tipo tensional (resumo)

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Migraine is manifested by recurrent episodes of headache and associated symptoms, including nausea, vomiting, photophobia and phonophobia. Besides these, there may be osmophobia, an intolerance to odors associated with primary headaches, especially with migraine, both in crisis as the period between episodes.

Objectives: To characterize odorants with those that trigger migraine attacks and to evaluate accuracy of osmophobia in the diagnosis of migraine.

Patients and Methods: This was a cross-sectional study examining non-random sample of convenience, in period from August to December 2011. There were 400 patients, 200 with migraine and 200 with tension-type headache according to diagnostic criteria of International Classification of Headache Disorders - second edition. Through a questionnaire, were interviewed about odorants triggers of headache, time of onset of pain after exposure and osmophobia during crisis and period between episodes. Odorants were divided into eight categories: foul odors, perfumes, oil, insecticides, cleaning products, cooking and beauty and others.

Results: Of the 400 respondents, 219 (54.8%) were female and 181 (45.2%) male. The age ranged from 22 to 58 years (38.6 ± 0.5 years, 95%CI 37.6 to 39.6). Of the 200 patients with migraine, 182 (91.0%) were female and 18 (9.0%) male and 200 patients with tension-type headache, 37 (18.5%) were female and 163 (81.5% of) male. The ratio male/female for migraine and tension-type headache was equal, respectively, to 0.1:1 and 4.4:1.0. The age of patients with migraine and tension-type headache was, respectively, 37.3 ± 0.6 (95%CI 36.0 to 38.6) and 40.0 ± 0.7 (95%CI 38.5 to 41.4) years. The differences for sex ($p < 0.001$, χ^2) and age ($p = 0.008$, Mann-Whitney test) were significant. There was triggered of headache by odors after 25.5 ± 1.9 minutes and median of 20 minutes of exposure in 70.0% (140/200) of patients with migraine and none with tension-type headache,

which ran the low sensitivity (70.0%, 95%CI=63.1 to 76.2) and high specificity (100.0%, 95%CI=97.6 to 100.0). Odors triggers headache are distributed in that order of frequency: perfumes (106/140, 75.7%), paints (59/140, 42.1%), gasoline (40/140, 28.6%) and bleach (38/140, 27.1%). There was significant in the association of odors trigger migraine, especially among perfume with cleaning (Phi=-0.459), cooking (Phi=0.238), beauty (Phi=-0.213) and foul odors (Phi=-0.582). During the crisis, osmophobia occurred in 86.0% (172/200) of patients with migraine and 6.0% (12/200) of those with tension-type headache. In migraine, osmophobia was associated with photophobia and phonophobia (66/200, 33.0%) or with nausea, photophobia and phonophobia (107/200, 53.5%) and presented high sensitivity (86.0%, 95%CI=80.2 to 90.3) and specificity (94.0%, 95%CI=89.5 to 96.7), with low percentages of false positives (6.5%, 95%CI=3.6 to 11.4) and negatives (13.0%, 95%CI=8.9 to 18.4). In the period between episodes, osmophobia was restricted to migraine patients (48/200, 24.0%). The areas under ROC curves were: 0.903 ± 0.017 to osmophobia during crisis; 0.784 ± 0.025 between crisis; 0.807 ± 0.023 to photophobia/phonophobia, and 0.885 ± 0.017 to pain developed by odors.

Conclusions: Odorants triggered migraine attacks in that order of frequency: perfumes, paints, gasoline and bleach. Osmophobia predominated in patients with migraine and may be a specific marker to differentiate migraine of tension-type headache.

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