

EDITORIAL

Smell disorders assessment – where do we stand?

Codrut Sarafoleanu, MD, PhD, Professor of Otorhinolaryngology^{1,2}

¹ENT&HNS Department, “Sfanta Maria” Hospital, Bucharest, Romania

²“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania



Smell has played an important role in the evolution of mankind since ancient times, The Roman Empire maintaining the commercial link with Egypt, Greece and the Far East by the free trade with perfumes. Moreover, each deity had a fragrance dedicated to them – for example, aloe was attributed to Mars god, while the musk and amber to Venus goddess.

In the Middle Ages, due to a coexistence between religious austerity (which forbade the use of perfumes) and major epidemics, fragrance raw materials have been highly sought after, but rarely used for their seductive power. The monks, crusaders and great explorers played a vital role in the development of the perfume industry between the 11th and 17th centuries – the first as defenders of the welfare of the mind and soul, while the latter brought back herbs and spices to enrich pharmacopoeia, culinary art and religious rituals.

Therefore, the olfactory function has proven its importance since ancient times, and over time, its study has also developed. There are numerous articles in the literature related to olfactory disorders, the causes they can generate, the diagnostic or treatment methods.

Nevertheless, it was not until 2017 that the Guideline to Smell Disorders (Position Paper on Olfactory Dysfunction) was published in the European Journal of Rhinology. According to this guide, a patient who claims changes in the olfactory function should receive a complete ENT examination, including nasal endoscopy, and perform psychophysical tests for the detection of the threshold level, and/or identification, discrimination.

Moreover, it is ideal to test the gustatory func-

tion as well because, although most patients also complain of hypo-/ageusia, a quick subjective test demonstrates that, in most cases, basic tastes (sour, salty, sweet, bitter) are integral; the flavour of food is actually the one that cannot be identified.

Both according to the guideline and from personal experience, subjective examination is not sufficient for diagnosis and prognosis. Forensic cases, in particular, require mandatory objective examination to confirm or refute patients' accusations in order to solve the ongoing processes.

In terms of treatment, it is that of the cause when the latter is known, while the olfactory “training” has proven its efficacy in postviral olfactory disorders.

An important role in determining the diagnosis of smell disorders is played by imaging, especially the brain MRI. One should specifically examine the area of the olfactory bulb, as well as the changes in the brain, in the central projection areas (posttraumatic or in neurological disorders). For example, in the case of children, the absence of the olfactory bulb establishes the diagnosis of certainty of congenital anosmia, while in adults the measurement of the bulb volume completes subjective investigations. It has been demonstrated in numerous studies that in postviral olfactory disorders, after rhinosinusal or posttraumatic conditions, the volume of the olfactory bulb decreases, and after the recovery of smell, it increases again, thus highlighting its plasticity.

In Romania, the ENT Clinic of “Sfanta Maria” Hospital is the only centre for assessing olfactory disorders. Our protocol follows the principles of the European guidelines, using psychophysical methods for identifying the odor threshold and

objective methods represented by the recording of evoked electrical potentials at the level of the olfactory bulb.

The threshold level is determined by the Snap and Sniff test that uses 20 “wand”-type devices, 15 impregnated with different concentrations of phenyl-ethanol and 5 “wands” without odor, and by means of the TO8 olfactometer that uses the principle of dynamic olfactometry with n-Butanol.

Although establishing a diagnosis of smell disorders seems very simple, in fact, in Romania, we face a series of difficulties in assessing patients, especially those involved in forensic cases, because there is little information in the literature on the recording of olfactory electrical evoked potential of the olfactory bulb and the interpretation of the results. At the same time, the objective method we use only records the electrical activity up to the level of the olfactory bulb, without being able to also evaluate the central pro-

jection areas. We cannot establish a cause-effect relationship between anosmia and the trauma suffered, because we do not know the patient’s previous state of health. Patients may be uncooperative, so without their written consent we cannot complete the investigations.

One difficulty we encountered while pursuing the protocol was related to imaging investigations, because, in many centres, radiologists have no competence to evaluate and especially to measure the volume of the olfactory bulb. Therefore, we work with a single imagist in the private sector, the financial aspect being another limitation for patients.

In conclusion, although remarkable progress has been made in the field of olfaction, there are still difficulties and limitations regarding the assessment, prognosis and treatment of olfactory disorders, but they will be overcome in the near future.