

Drug-induced taste disorders: analysis of prescriptions of patients living in two nursing homes in France

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INTRODUCTION

With the age, the acuteness of the senses changes, causing a progressive decline in the quality and the importance of perceived sensations. This change is not always perceived when the problem starts [1]. The taste is considered as a minor sense and it is often neglected. These disorders can lead to treatment noncompliance. This can lead to nutritional deficiencies, anorexia and increase of different diseases like diabetes, hypertension... Patients can be tempted to overeat sugar, salt, spices... to restore the taste. The discomfort associated with loss of taste can also lead to depression [2]. Taste disorders are a poorly studied effect and there is various etiologies. In fact, many diseases can cause such disorders such as damage of the nervous system, nutritional damage, endocrine damage, toxic cause ... [1]. In elderly receiving long-term medication, taste disorders are suspected as an adverse event in 11% of cases [3]. It is difficult in the nursing homes population, with dementia, to evaluate precisely these disorders.

The objective of this study is to identify the drugs that may cause taste disorders in a nursing home population.

MATERIAL AND METHODS

- Analysis of 104 prescriptions of patients living in two nursing homes of France
- Descriptive analysis of the study population (age, gender, taste disturbance history)
- Descriptive analysis of patients treatment (number of lines, Anatomical Therapeutic Chemical Classification (ATC) System)
- Bibliographical search concerning taste disorders for each drug found in the prescriptions: search in the summary of product characteristics (SPC), reference books (Martindale, Meyler's, Drugdex database), PubMed (request made with the term Mesh "Taste disorders"), european database of suspected adverse drug reaction reports (Eudravigilance - <http://www.adrreports.eu/fr/search.html>)

RESULTS

Table 1: Characteristics of study population

	Men (n=26)	Women (n=78)	Total (n=104)
Median age in years (extreme)	86 (45-106)	87,5 (65-101)	87 (45-106)
Median number of lines prescription (extreme)	9 (2-20)	8 (1-19)	8,5 (1-20)
Filled history of taste disorder	1	0	1

Among the 104 prescriptions studied:

- there are 905 lines of prescription with 234 different drugs,
- the most represented drug classes are the nervous system drugs (mostly psychotropic drugs and psychoanaleptics), cardiovascular system drugs (mostly drugs acting on the angiotensin-renin system, calcium channel blockers), the alimentary tract and metabolism drugs (mostly laxatives and drugs for acid related disorders) and ophthalmic drugs (figure 1),
- for 66 (28.20%) drugs, taste disorders are reported in the SPC or reference books,
- for 97 (40.93%) drugs, taste disorders are not mentioned in reference books but at least one case is reported in the literature or Eudravigilance database,
- for 70 (29.91%) remaining drugs, taste disorders are not described,
- the most described drugs as being able to cause taste disorders among those taken by patients in the study are the **drugs acting on the renin-angiotensin system and antidepressants**.

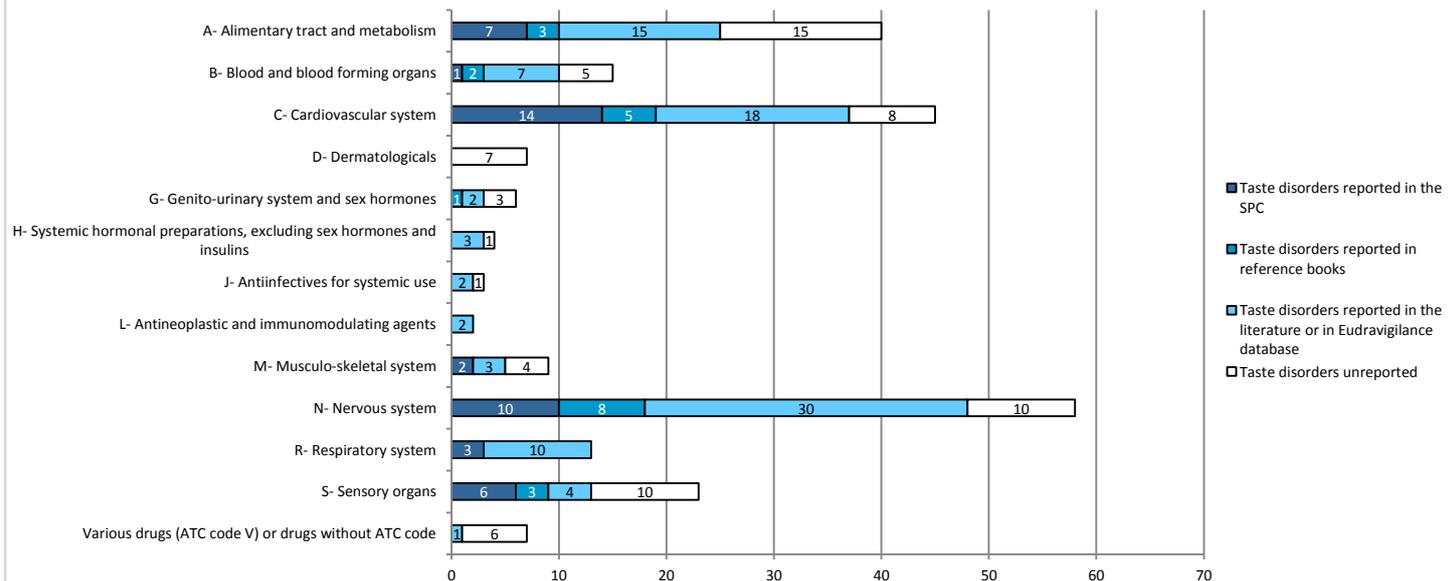


Figure 1: Number of drugs according to ATC classification (n=234)

DISCUSSION - CONCLUSION

Iatrogenic taste disorders can be explained by different mechanisms: 1) xerostomia especially with anticholinergic drugs, 2) zinc deficiency (eg, angiotensin converting enzyme inhibitors, levodopa ...), 3) copper deficiency (eg, D-penicillamine, salts gold, antithyroid drugs), 4) vitamin A deficiency (eg statins), 5) damage of the taste epithelium (eg, certain antibiotics, cancer drugs), 6) by interference at transduction [2-4]. A study carried out by a Regional Pharmacovigilance Center in 2001 tried to identify the drugs involved in taste disorders with cases reported in the National Pharmacovigilance Database. The main drugs involved were the angiotensin converting enzyme (ACE) inhibitors, terbinafine, zopiclone, penicillamine, imidazole, macrolides, quinolones, carbimazole and calcium channel blockers. The outcome was favorable in 60% of cases, while 5% of these patients had continued their treatment. For 24% of patients, taste disorders persisted without improvement although 62% of them have stopped their treatment [5,6]. More recently, an Italian case/non-case study was conducted on the Italian spontaneous adverse drug reaction reporting database. The aim of this study was to identify major drug classes associated with taste and smell alterations. Hundred and twenty-eight cases were found and Odds Ratio were statistically different for macrolides, terbinafine, fluoroquinolones and protein kinase inhibitors [7].

Taste disorders affect the quality of life of patients and can lead to malnutrition, exacerbation of pathologies or contribute to depressions. It is often found a lack of data in the files relating to a research of the nutritional status of patients (BMI, albumin, history ...). **This study may help physicians who worked in nursing home to identify and prevent drug-induced taste disorders.**

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