Editors' Opinion

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Vasoconstrictive decongestants: the authorities' dithering leaves patients in danger

The cardiovascular and neurological adverse effects of vasoconstrictive decongestants (*ephedrine, naphazoline, oxymetazoline, phenylephrine, pseudoephedrine* and *tuaminoheptane*) used to relieve symptoms of the common cold are well known (1,2). In France, nasal preparations have been placed on List II of moderately dangerous substances and are therefore available by prescription only, while oral forms are available without a prescription.

Since the 1990s, several pharmacovigilance reports on these drugs have been published in France, and all have given similar results regarding serious and even fatal adverse effects such as myocardial infarction and stroke, sometimes in young patients. In addition, these reports show that adverse effects are more frequent with oral forms than with nasal forms; that the recommended treatment periods and maximum doses are not respected; and that several medications containing vasoconstrictive decongestants are often taken concomitantly (2-4). Until early 2013, the main measures taken by the French health products agency (ANSM, formerly Afssaps) consisted of modifying the SPCs and patient leaflets to limit the duration of treatment and to add contraindications and warnings (**a**)(4,5).

In late 2012, after reviewing the results of the latest pharmacovigilance update, which yet again confirmed these dangers, the ANSM National Pharmacovigilance Committee recommended that oral vasoconstrictive decongestants become subject to compulsory medical prescription. On 7 January 2013, this recommendation, that only sought to limit the use of these drugs, had not resulted in any effective action. Furthermore, ANSM *"has no plans at this time to apply this measure broadly and indiscriminately to all vasoconstrictors. However, it could be applied to certain products prone to misuse"* (our translation) (4,6).

While measures aimed at limiting misuse of medicines are welcome, they are in no way sufficient in the present case. Patients must be protected from the life-threatening adverse effects of vasoconstrictive decongestants used to treat simple colds, and simple market withdrawal is the best option.

This procrastination further illustrates ANSM's incapacity to take timely decisions on drug safety and thereby to fulfil its primary mission: to protect patients.

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a- In 2001, phenylpropanolamine, an amphetamine-like vasoconstrictor, was placed on List I of dangerous substances, after opinions concluding (our translation) that "the benefits of phenylpropanolamine are minor considering the very low but severe risk of haemorrhagic stroke." Products containing this drug were subsequently withdrawn from the French market, or their composition was changed (ref 7).

1- Prescrire Rédaction "Les effets indésirables systémiques des vasoconstricteurs rhinopharyngés" *Rev Prescrire* 1982; **2** (14): 24.
2- Prescrire Editorial Staff "Vasoconstrictor: neurological and cardiovascular adverse effects" *Prescrire Int* 2003; **12** (63): 21.
3- Prescrire Rédaction "Décongestionnants ORL: trop risqués en France aussi" *Rev Prescrire* 2009; **29** (312): 752.
4- Afssaps "Point d'information sur les décongestionnants de la sphère ORL renfermant un vasoconstricteur: information importante sur la sécurité d'emploi et l'usage" 15 December 2011 + ANSM "Point d'information sur les décongestionnants de la sphère ORL renfermant un vasoconstricteur: mise en garde de l'ANSM" 11 December 2012: 4 pages.
5- Prescrire Rédaction "Décongestionnants vasoconstricteurs et risques cardiovasculaires: compléter les RCP ne suffit pas" *Rev Prescrire* 2011; **31** (335): 660.
6- Agence de Presse Médicale "L'ANSM réticente à placer la pseudoéphédrine sous prescription obligatoire" 6 December 2012: 1 page.
7- Prescrire Rédaction "Phénylpropanolamine: préparations définitivement interdites" *Rev Prescrire* 2001; **21** (222): 751.

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Vasoconstrictive drugs: poisoning in children

- **FDA review.**

In October 2012 the U.S. Food and Drug Administration published an analysis of 96 cases of accidental ingestion of vasoconstrictive nasal decongestants and eyedrops by children, reported between 1985 and 2012. The drugs involved were intended for the relief of nasal congestion or ocular hyperaemia (1).

The ingested substances were *tetryzoline*, *oxymetazoline* or *naphazoline* (combined with *methylthioninium chloride* in eye drops and with *prednisolone* in nasal solution). The children were aged from 1 month to 5 years (1). 53 children were hospitalised because of nausea, vomiting, lethargy, tachycardia, respiratory disorders, bradycardia, arterial hypotension or hypertension, sedation or drowsiness, mydriasis, stupor, hypothermia, hypersalivation, or coma. No deaths occurred.

The children were found chewing, sucking or playing with a bottle, or an empty bottle was found nearby (1). The amount ingested, when specified, was between a few millilitres and one or even one-and-a-half bottles (1).

Other published reports suggest that ingestion of between 2 and 5 ml of 0.05% *tetryzoline* solution by a child is sufficient to induce coma. Respiratory depression and bradycardia have been observed in children aged from 25 days to 2 years who ingested 1.5 to 3 ml of such a solution.

Even though access to these products is easier in the USA, the severity of these paediatric cases is a further reason not to use decongestants. Indeed, in addition to their serious cardiovascular adverse effects in both adults and children, their presence in the home poses a serious danger for children (2). Vasoconstrictive nasopharyngeal decongestants should simply be taken off the market.

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Selected references from Prescrire's literature search.
1- U.S. Food and Drug Administration "FDA drug safety communication: serious adverse events from accidental ingestion by children of over-the-counter eye drops and nasal sprays" 25 October 2012. www.fda.gov accessed 5 November 2012: 4 pages.
2- Prescrire Rédaction "SMR "insuffisant" et dérembourses: des incohérences. Décongestionnants vasoconstricteurs" *Rev Prescrire* 2012; **32** (348): 738.

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