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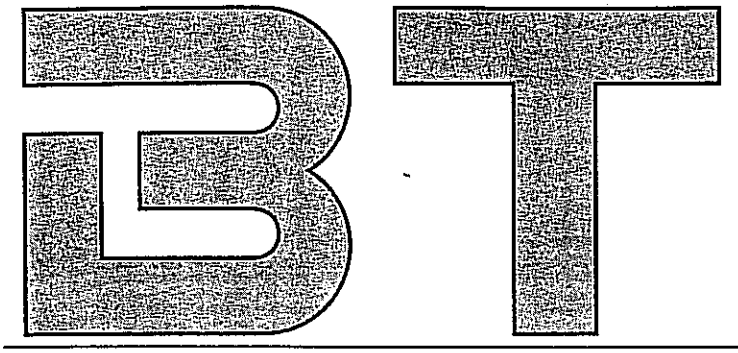

QUESTION FROM THE MEDICAL PRACTICE

How long may nosedrops be administered which diminish the swelling of the nasal mucous membranes?

By Dr. Johannes John

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NSWER:

"Agents which diminish the swelling of nasal mucous membranes are limited in their usefulness." This declaration was made in the German medical publication "Arzneitelegramm" No. 4 of April, 1987, p. 39), in a report entitled "New Findings on Nosedrop Rhinitis."

The following items can be provided by way of elaboration on this statement:

. Narrow-angle glaucoma and rhinitis sicca are two conditions which indicate restriction of administration, or total prohibition, of the following: indanazoline, naphazoline, oxymetazoline, tetryzoline, tramazoline, tyramine, xylometazoline, as well as other sympatholytic drugs applied to the nose or the eyes. Side effects registered with these agents are reactive hyperemia and burning pain (also see the German publication "Rote Liste, October 1987, page 98, Item S 7).

. In addition, possible systematic effects must always be expected, even only upon local administration of the above-listed substances. Special caution is necessary in dosage for infants and small children (ibid).

. In any case, great caution is always required upon administration of a great number of kinds of nosedrops, especially for infants and small children.

For more details here, see Items 7 (8), 8, 10, (1, 10 - 13), 11 (1 and 15), and 12.

Despite all care taken with respect to dosage and body weight, the danger of absorbent intoxication via the nasal mucous membranes is all the greater, the younger the child. This danger has been known for some time, at least since 1965 (also see Item 1).

4. Following subsidence of the desired therapeutic effects of nosedrops which diminish the swelling of nasal mucous membranes, blockage of the nasal passages can recur as a result of the rebound effect and the vasodilation involved therewith: i.e., reactive hyperplasia of the treated mucous membranes and nasal concha. As a result, the desired effects of local administration of nosedrops which diminish swelling will gradually subside to the point of total noneffectiveness.

The desired effect of nosedrops with detumescent action also gradually subsides with prolonged administration, from purely pharmacological grounds alone (tachyphylaxis). One example of the danger of prolonged administration here is the so-called "privin abuse," a phenomenon also known since 1965 (1). Privin (R) = INN naphazolin = 2 - (1-naphthylmethyl)-2-imidazoline is therefore an a-sympathicomimetic vasoconstrictor (also see Item 1 above).

The phenomenon of tachyphylaxis (i.e., the progressive diminution of effectiveness of a pharmaceutical upon repeated administration over short intervals) occurs in especially pronounced form with indirect sympathicomi-

metic agents, as a result of exhaustion of the noradrenaline store (2a, 2b). All the agents listed in Item 1 above, in addition to ephedrine, are sympathicomimetic in nature (2b).

From the standpoint of historical interest, it can be noted at this point that the therapeutic, anti-asthmatic, and stimulating effects of the Chinese drug ephedra vulgaris (mao huang) were investigated by Shen Lung as early as 2700 BC. It was 4500 years later, in 1887, however, that Nagai was successful in isolating ephedrin, the active constituent of this drug, in its pure form. It was then in 1920 that Späth (3) was successful in synthesizing ephedrin for the first time (4a, 4b). K.K. Chen (4b) and C.F. Schmidt (5) were the first to administer ephedrin in European medicine, in the year 1924.

5. The administration of vasoconstricting agents in the form of nosedrops and nasal sprays with anti-swelling action on the mucous membranes should never be carried out over long periods of time. Extended use will, sooner or later, lead to habituation (also termed "privinism"). The result is rhinopathia medicamentosa chronica (6).

   It must also be pointed out, however, that the condition of rhinopathia medicamentosa chronica — i.e., a more or less chronically stopped nose — can also be caused by a great number of other medications, which include the following: a-blockers, dihydralazine, guanethidine, clomethiazole and rauwolfia alkaloids (reserpine) (6).

   The above-stated German medical publication "Arzneitelegramm" (No. 4 of April, 1987, p. 39) does not assess as harmful, however, the employment for a period of up to seven days of agents which diminish the swelling of nasal mucous membranes.

6. Physicians in a rhinitis clinic in London have recently begun a campaign directed toward the prohibition of public advertising for nasal constrictors. They are also attempting to enforce a conspicuous mandatory notification on the package of such medications stating that the products should not be used for longer than five days at a time (7).

7. In Chile, detumescent nosedrops are sold only on a prescription basis, as part of an effort to avoid nosedrop rhinitis from excessively long unsupervised administration. The package insert for such products carries notification in Chile that such rhinological medication is not suitable for children under two years of age (8).

8. The drying effects of such vasoconstricting drops are also harmful. Under certain conditions, the use of suprarenin can lead to mucosal necrosis in infants.

9. From H.H. Neumann's investigations in 1961 published as "The Microcirculation of the Nose," we have learned that inflamed mucous membranes react less well to these constringent agents than normal mucous membranes, with the result that large dosages — often toxic in magnitude — of these agents are often required to produce the desired effect.

10. The use of menthol in nosedrops can lead to damage to the ciliary system in concentrations above 1%. It has also been held responsible among infants and small children for laryngospasm, which can be triggered as Kratschmer-Holmgren Reflexes from the nasal mucous membrane, via the nervus trigeminus. In this connection, a further causative effect has been seen in subsequent disturbances of the central pulmonary activity, leading as far as asphyxia.

    In accordance with the "Manual of Medicine" by G. Thiele, the Kratschmer-Holmgren Relfex is taken to mean a respiratory (and, under certain circumstances, cardiac) standstill triggered via the trigeminus and caused by excessively irritant agents such as ether, chloroform and acetic acid on the mucous membranes of the nose. The Kratschmer-Holmgren Reflex has often been observed to take place upon inhalation of irritant vapor, such as from ether, and is frequently observed in conjunction with circulatory reflexes (14).

    Florin Kratschmer (1843-1922) was professionally active as a physiologist in Vienna, and Alarik Fritjof Holmgren (1831-1897) was involved in the same profession in Uppsala, Sweden.

11. One component of nosedrops, paraffinum liquidum, can always be associated with the danger of pulmonary complications; over a period of time, considerable amounts of this substance can collect unnoticed in the lungs (sometimes only on one side). In contrast to saponifiable oils, such as olive oil, it is possible for paraffinum liquidum to remain immobile in the lungs and cause oil pneumonia or pulmonary paraffinom (1, 15). These dangers are especially great for infants and young children, a phenomenon which has also been well known for many years (i.e., since 1965: 1).

12. In accordance with the findings reported above in Items 1 and 11, it should be clear that great caution is indicated in the administration of detumescent nosedrops, as well as such products which contain menthol or paraffinum liquidum. Greatest care is necessary when using such agents over long periods, and with children. A great number of factors must be considered to avoid local or serious general health damage as a result of long-term usage.

13. In conjunction herewith, attention should be called to the HEEL preparation Euphorbium Compositum: nosedrops in spray form without propellant gas. This medication contains none of the constituents mentioned in the items above. The following are contained in 100 ml of this preparation:

    - Euphorbium D 4
    - Pulsatilla D 2
    - Luffa operculata D 2
    - Mercurius bijodatus D 6
    - Mucosa nasalis suis D 8
    - Hepar sulfuris D 10
    - Argentum nitricum D 10
    - Sinusitis nosode D 13.

    Each of these constituents are contained (1 ml) in an

isotonic sodium chloride solution.

The recommended dosage for adults is spraying once or twice in each nostril, 3 to 5 times daily. For children under 6, as well as for infants, there is absolutely no danger in administration by spraying once into each nostril, once or twice daily (16).

It should also be pointed out that the use of Euphorbium Compositum nosedrops, even over longer terms of use, is not associated with the rebound effect or tachyphylaxis (16). This product can therefore be used without danger and without side effects as part of long-term therapy extending over weeks at a time.

This subject and product have also been studied in an article in the German professional publication "Therapiewoche" by W.D. Connert and J. Maiwald, with the title "The Therapy of Rhinopathic Conditions of Chronic, Medication-Related, and Vasomotoric Origin: Experience with a Biotherapeutic Nosespray" (6). These specialists employed the objective methods of rhinomanometry for measurement of the passage of air through the nose. In the study, Euphorbium Compositum nosedrops were used for more than 50 patients with dosage of spraying twice in each nostril, 3 times daily, for a period of six weeks. Side effects of neither local nor systematic nature were observed.

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REFERENCES:

(1) Breuninger H., Nasentrophen beim Säugling und Kleinkind, HNO (Berlin) 13, 124 (1965).

(2) Handlexikon der Medizin von G. Thiele (1960), 1) S. 2403; b) S. 2366; c)S. 1377, S. 1090

(3) Späth/Göhring, Anz, der Akademie der Wissenschaften, Wien, Math, nat. Kl. Nr. 12, 136 (1920)

(4) Hauschild, F., Pharmakologie und Grundlagen der Toxikologie a) 2. Auflage (1960), S. 4 und S. 589; b)4. Auflage (1973). S. 4 und S. 927-928.

(5) Chen, K.K./C.F. Schmidt, J. Pharmacol. exp. Ther. 24, 339 (1924).

(6) Connert, W.D., Mahwald J., Therapie chronisch-medikamentös und vasomotorisch bedingter Rhinopathien; Erfahrungen mit einem biotherapeutischen Nasenspray, Therapiewoche 7, 1179-1186. (1987).

(7) Capel, L.H., Swantson A, R., Brit. Med. J. 283, 1258 (1966).

(8) WHO: PDT/DI/85.3, Seite 27.

(9) Naumann, H.H., Die Mikrozirkulation der Nasenschleimhaut, Thieme-Vertag, Stutgart 1961.

(10) Bettecken, F., Nilnocerel Vergiftungsaymtome bel Säuglingen nach Gebrauch mentholhaltiger Salben, Monch. Med. Wachr. 106, 1218 (1964).

(11) Brugsch H. Vergifungen im Kindesalter, Enke-Verlag, Stuttgart 1956.

(12) Jerome H. Lechat, P., Therapeutische Studie Ober mentholhaltige Präparate, Theräple 8, 720 (1955).

(13) Moll, H., Gefahren mentholhaltiger Präparate im Kindesaiter, Fortschr. Med. 82, 861 (1964).

(14) Pschyrembel, Kinisches Wqrterbuch (1986). S. 906.

(15) Rotter W., Pathol. Demonsrtation, Med. Geseltschaft, Frankfurt//M. 1964.

(16) John J. Frage aus der Praxis; Erkältungskrankheiten grippale Infelde, Grippe (Influenza). Welch Therapie? Biol. Med. 7.5, 228-232 (1976).