

Documents

Cnockaert, P.^{a b c}, Vecellio, L.^d, Dubus, J.-C.^{e f}, Jamar, F.^{b g}, Reyckler, G.^{a b h i}

A large-volume low-pressure nasal irrigation delivers drug into the nasal cavity? An in vivo study
(2023) *Drug Delivery and Translational Research*, .

DOI: 10.1007/s13346-023-01455-z

^a Service de Kinésithérapie et Ergothérapie, Cliniques universitaires Saint-Luc, Brussels, Belgium

^b Institut de recherche expérimentale et clinique (IREC), pôle de pneumologie, ORL et Dermatologie, UCLouvain, Brussels, 1200, Belgium

^c Faculté des Sciences de la Motricité, UCLouvain, Louvain-La-Neuve, Belgium

^d PST-A, Université de Tours, Tours, France

^e Pneumologie et allergologie pédiatrique, CHU Timone-Enfants, Marseille, France

^f Aix-Marseille Université, IRD, AP-HM, MEPHI, IHU Méditerranée-infection, Marseille, France

^g Service de Médecine Nucléaire, Cliniques universitaires Saint-Luc, Brussels, Belgium

^h Service de Pneumologie, Cliniques universitaires Saint-Luc, Brussels, Belgium

ⁱ Haute Ecole Vinci, Secteur Santé, Département de kinésithérapie, Brussels, Belgium

Abstract

The nasal administration route emerged as an interesting route in systemic and brain drug delivery, and different modalities of nasal delivery are available. The nasal irrigation is one of them, but there is a lack of studies investigating the distribution of a large-volume irrigation. The main aim of this study was to assess the deposition of radiolabeled saline in the nasal cavities and paranasal sinuses following nasal irrigation by imaging. Five healthy males volunteered to perform large-volume low-pressure nasal irrigation, with a douching device containing 50 mL of radiolabeled isotonic saline. Participants underwent a scintigraphy immediately after. Both the nasal cavities and maxillary sinuses were systematically reached by the solution during nasal irrigation. The sinuses set in a lower position during nasal irrigation showed a tendency to be more irrigated than the sinuses set in a higher position (7.67% vs 22.72%; $p = 0.086$). Moreover, substantial inter- and intraindividual heterogeneity regarding solution deposition was observed. Large-volume low-pressure nasal irrigation is a good modality to reach the maxillary sinuses as well as the nasal cavities. In order to ensure adequate reaching of both nasal cavities and paranasal sinuses, nasal irrigation should be performed bilaterally. Graphical Abstract: [Figure not available: see fulltext.] © 2023, Controlled Release Society.

Author Keywords

Nasal lavage; Nose; Sinus

Correspondence Address

Reyckler G.; Service de Kinésithérapie et Ergothérapie, Belgium; email: Gregory.reyckler@uclouvain.be

Publisher: Springer

ISSN: 2190393X

Language of Original Document: English

Abbreviated Source Title: Drug Deliv. Transl. Res.

2-s2.0-85174971112

Document Type: Article

Publication Stage: Article in Press

Source: Scopus