Poster 592

Nasal epinephrine spray for anaphylaxis: which is better - powder or liquid?

Nasal powder has significantly higher deposition in the nasal cavity in comparison to liquid nasal spray which could lead to enhanced blood absorption

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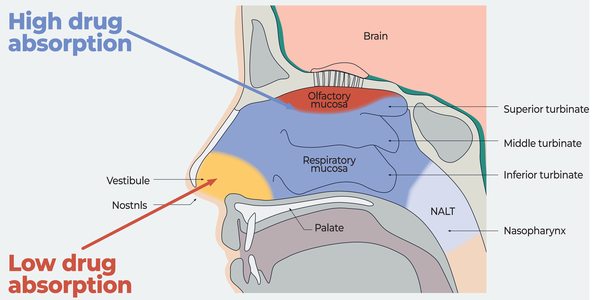
Rational:

- The respiratory and olfactory mucosa covering the central and upper portion of the nasal cavity represent the prime sites for drug absorption, whereas the vestibule of the nose which is lined with stratified squamous epithelium, allows for minimal absorption.
- Nasal liquid spray of epinephrine was approved as an alternative to the IM autoinjectors. However, its published pharmacokinetics parameters were lower than those of IM autoinjectors, particularly during the first 10-15 minutes.
- Nasus Pharma developed a powder-based nasal spray (FMNXIN002) which had been successfully evaluated in clinical trials.
- **We compared the nasal cavity deposition of liquid and powder epinephrine.**



Methods:

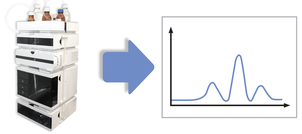
1.

Epinephrine deposition within the nasal cavity after administration of the commercial liquid spray and FMNXIN002 were determined using a realistic nasal model (AINI, Copley Scientific UK).

Samples collection

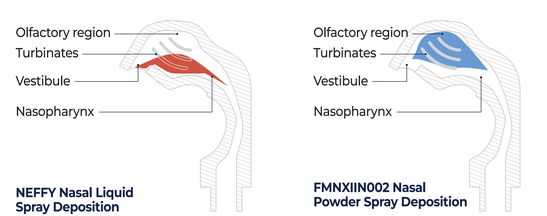
2. Epinephrine was collected from the model parts and analysed by HPLC

3. HPLC analysis and calculations

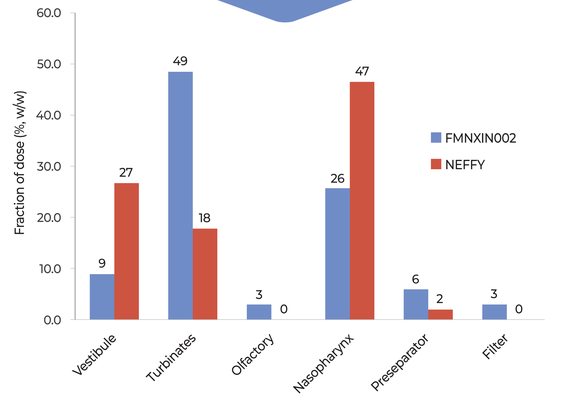


Calculating the proportion of epinephrine in each section of the nasal cavity.

Results:



Powder deposition was 2.7 times higher than liquid spray, in the optimal absorption area



Conclusions:

FMNXIN002 effectively reaches the high absorption areas sections of the nasal cavity, potentially enabling faster and higher absorption which could lead to earlier onset of action that is critical for the treatment of anaphylaxis.

Funded by Nasus Pharma . * tair@nasuspharma.com