

DEVELOPMENT OF A NASAL SPRAY CONTAINING XYLOMETAZOLINE HYDROCHLORIDE WITH NITRIC OXIDE RELEASING SOLUTION FOR TREATMENT OF UPPER RESPIRATORY TRACT INFECTIONS

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ABSTRACT

The goal of this study is to create a nasal spray combining Nitric oxide gas and xylometazoline HCl that combines the nasal decongestant action of xylometazoline HCl with the antiviral activity of Nitric oxide to treat common upper respiratory tract infections such as the common cold, etc. Three distinct formulations comprising acidified nitrite solution, xylometazoline HCl, menthol, and camphor with three different pH values i.e. 2.6 ± 0.1 , 3.4 ± 0.1 and 4.3 ± 0.1 , were created to see if their properties interfered with each other. The stability of all three formulations was tested by monitoring NO gas release at 0 day, 15 days, 30 days, 45 days and 60 days intervals, respectively. The results showed that the formulations with pH 3.4 ± 0.1 were more stable and released NO gas even after 60 days. These findings provide the basis for starting further clinical studies on the pathophysiology for emerging infections.

KEYWORDS: *Xylometazoline HCl, Nitric Oxide, Upper Respiratory Tract Infections*

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