

Article Type: Mini Review

Received: 02/02/2022

Published: 22/02/2022



Open Access Journal of
Biogeneric Science and Research
ISSN 2692-1081

DOI: 10.46718/JBGSR.2021.10.000261

Formulation Development of “RUNNY NOSE NAPKIN”

Smita More* and Kanchan Khopade

PES Modern College of Pharmacy (For Ladies) Moshi, India

*Corresponding author: Smita More, PES Modern College of Pharmacy (For Ladies) Moshi, India

ABSTRACT

Purpose: To examine the efficiency of prepared formulation for cough and cold by comparing with marketed formulation which can be a supportive therapy in Hospitals in cost effective way.

The Runny nose napkin is the quite traditional way but not formulated yet for the treatment of sneezing and coughing. Normally for the treatment of any runny nose we uses the antihistaminic agent, anti-tussive drugs, expectorants, but each formulation having its own limitations. We used the common route of inhalation for the drug targeting.

Methods: Different concentration of all the ingredients used in formulation was studied for its effectiveness and stability study. The common ingredients including camphor, menthol, eucalyptus oil, cinnamon oil and many others are used in the fixed combination.

Results: The ratio is fixed on the trial and error basis for achieving the required therapeutic value. Trials were done on few of the healthy volunteers who were having cough and cold were asked to inhale the napkin containing different combinations of ingredients to different patients. The most effective combination was optimized from the duration of treatment and stability of formulations.

Conclusion: These cost effective and more hygienic napkins will be the better health care product.

Keywords: Nasal napkin, sneezing, coughing, volatile oils

Introduction

In India number of formulations are available for common cold & cough. But every formulations having its own disadvantages. We are trying to overcome such difficulties by making “THE RUNNY NOSE NAPKIN.” The marketed formulations are compared with this formulation which showed the significant results. The Runny nose napkin is available as single use preparation hence provides the hygienic use. The formulations which available in the market eg. Waxy ointments (containing hydrophobic base nature) causes the greasy appearance on the topical areas like face, nose, hands etc. due to this it is causes discomfort to the patient. Some other drawbacks of the existing formulations for cough and cold are cost, greasy appearance (ointment), cannot apply if a person is allergic to ingredients, and the formulations should come in contact with eyes or broken skin.

To overcome such basic problems, we have tried to improve formulation as well as patient compliance. The

effectiveness of RUNNY NOSE NAPKIN was checked on healthy volunteers. The stability issue was overcome by using the biodegradable covering, this covering makes desired size and shape to the napkin. The volatile natural ingredients were selected which are used as nasal decongestant. The inhalation of these natural ingredients provides pleasant feel and ease for breathing.

Material Method

Materials

Menthol, camphor, cotton, cinnamon oil, eucalyptus oil etc. were obtained from college source.

Method of preparation

a. First selection of cotton with the fiber size of 20um wide and 2cm long, the cotton should be sterile one.

b. The combination of ingredient should be in the fixed ratio and volume, and then the mixture is placed in the closed amber color container to prevent from volatilities.



c. The thin cotton bed is prepared with thickness of 5mm with fixed shape 5cm*3.5cm.

d. Then pour the mixture on to the cotton bed with optimum volume, onto which another same sized cotton bed is placed and then pressed.

e. That formed bed is wrapped in thin mesh cloth piece which provide the firmness to the cotton bed.

f. As wrapping is done seal the ends of that bed.

g. Packaging is the important step of the runny nose napkin as it prevents evaporation of mixture embedded in that napkin.

h. About 4-5 napkins are placed in polythene bags which provides opening for removal of napkins and for resealing that packet.

Removal of napkin from packaging:

a) Partially peel back sealing sticker.

b) Pull out napkins as required.

c) Reseal sealing sticker firmly.

How to use: - Napkin helps the ingredients to increase surface area as it inhaled more faster and drug shows quick action. Different combination of ingredients was tried but the result shown by following ratio was found to be most effective one.

Fixed ratio of solvent: Camphor: menthol: Eucalyptus oil: Cinnamon oil: eugenol (35:15:20:25:5)

Evaluation Test

Identification test for cotton

1. Size of single fiber (average): Upto 2cm long and 20cm wide.

2. LOD: 3.2%w/w

3. Test: iodinated zinc chloride solution Gives violet colour to the cotton fibers.

4. Thickness of cotton bed: 0.3-0.4cm

5. Stability studies

Stability testing of napkins: About 7-8 days, Napkins are been exposed to the open environment for evaluation of stability parameter (10 napkins). Following result was observed.,

| Sr.no. | Solvent mixture added (ml) | Effectiveness | Inference |
|--------|----------------------------|---------------|-------------------------|
| 1 | 0.5 | 24hr | Less effective. |
| 2 | 1.0 | 3 days | Average stability. |
| 3 | 1.5 | Up to 5days | Effective. |
| 4 | 2.0 | 6-7 days | Effective but irritant. |
| 5 | 2.5 | 6-7 days | Effective but irritant. |

| Types of formulations | Way to use | Advantage | Stability |
|-----------------------|---|--|---|
| Formulated mixture | Easy | Easy to handle. Cost effective (2Rs/piece) | More stable due to covering and packaging |
| Marketed oil | Difficulties for cut the capsules, leakage etc. | Require scissor for cutting. Costly (5Rs/capsule) | Less stable. Faster Evaporation. |

Evaluation of Napkins after Placing into the Packaging Material

The special covering material is needed, the napkins are placed into the polythene covering which provides more stability toward volatility. The self-sealing covering make easy removal and resealing of the packaging material. After keeping in the packaging material again the stability is checked for months. The results were found to nearly the same as compared to when kept at room temperature [1,2].

Stability testing at elevated temperature

The napkins (2-3) placed in the oven for checking its stability during variation in the temperature. About 30–40-degree temperature is maintaining and after 1hr checked the content availability in the napkins. Sample was found to be stable after packing the napkins in packaging material. Comparative study for prepared mixture and the marketed soft gelatin containing volatile oil as decongestant:

Novelties: -

- Safe to use in all patient.
- Cost effective.
- Biodegradable.
- Easy for use.

For single use only.

References:

1. Essentials of medical pharmacology by KD Tripathi 5th edition page number 218-221.
2. The theory and practice of industrial pharmacy, Leon Lachman, page no. 118-126.