WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 11, 1057-1065. Research Article ISSN 2277–7105

FORMULATION AND EVALUATION OF HERBAL OINTMENT CONTAINING NEEM AND TURMERIC EXTRACT

[1]*Sandip H. Lahare, [2]Kiran H. Lahare, [3]Jaya R. Lonsane, [4]Dr. Yuvraj Girbane, [5]Ekta Chouthe

[1,2,3]Student, [4]Principal, [5]Assistant Professor

Department of Pharmaceutical, Shri Sai Institute of Pharmacy and Research Chh. Sambhajinagar.

Article Received on
09 April 2024,

Revised on 30 April 2024,
Accepted on 20 May 2024

DOI: 10.20959/wjpr202411-32390

***Corresponding Author**
Sandip H. Lahare
Student, Department of Pharmaceutical, Shri Sai Institute of Pharmacy and Research Chh. Sambhajinagar.

ABSTRACT

Nearly most of the herbal ointments are made up from a plant extracts which are present in the plants. Like other dosage form herbal ointments are also made for treating various diseases. In today's life ointments are mostly used for various treatments to overcome skin diseases like eczema, herps, psoriasis, cellulitis etc. Present work is for the formulation and evaluation of Neemand Turmeric extract ointment. Maceration method is used to prepare ethanolic extract. By using levigation method ointment preparation and ointment formulation by incorporating the extract as the formulation is completed it was evaluated for its physicochemical parameters like color, odour, consistency, ph, spreadability, extrudability, diffusion study, washability and solubility. Irritancy and spreadability is also checked at various temperaturs. This can be a media to use the medicinal properties of Neem and Turmeric effectively. It is a simple dosage form.

KEYWORDS: Extrudability, Levigation, Maceration, Spreadability.

INTRODUCTION

The use of herbs is being explored by certain European and oriental countries and has in practice since the centuries. The great work has been done which escaped the common man's reach and knowledge. Use of herbal is independent of any age group hence they are effective

remedies and they also has almost no side effects. Combined two or more herbs used in the formulation are known as polyherbal formulations. There are too many studies have been conducted with the extracts of Neem leaves (Azadirachta indica family- Meliaceae) and turmeric rhizomes extracts (Curcuma longa Family- Zingiberaceae) with the combination of many other drugs.

Along with other dosage forms herbal dosage forms are also available in the form of ointments. They are semisolid preparations and are used topically for several purposes like antiseptics, antiprurities, astringents, keratolytics etc.

The species Azadirachta indica of family- Meliaceae consists of leaves and other aerial parts which are used in the preparations of ointments. Neem leaves and Neem oil are used to prepare many ointments and they contains many properties such as antiseptics, antiviral, insecticides and also attributed infertility. And is being screened efficacy in treatment of AIDS.

Turmeric species Curcuma longa family- Zingiberaceae consists fresh and dried rhizomes. Turmeric is used as antiseptic, condiment or spice, expectorants etc. Turmeric is reach in antioxidants research turmeric has been shown to be useful in treating arthritis, depressionmanagement and liver disease and Alzheimer management.

Materials used in the preparation of herbal ointments are: Collection of plant material: The dried rhizomes of turmeric were purchased from local market of Chhatrapati Sambhajinagar and Leaves of plant Neem were collected from the Chhatrapati Sambhajinagar.

Neem extract preparation

The plant leaves were collected from the plants and distilled water is used to wash the leaves thoroughly. Then they shade dried For 10 days. After that the dried leaves are ground in powderform. 100 gm of powdered extract was assimilated with 350ml of 90% ethanol for 3 hours. Thenit is transferred to percolator and add 150 ml of 90% ethanol for maceration for 7 days with the occasional stirring.

Then ethanoic extract is collected. After that it is concentrated to get blackish green residue. Extract was stored in dark and cool place.

Turmeric extract preparation

Dried rhizomes of turmeric were grinded and it is collected in the form of powder. Then powder obtained was followed for extraction same as that of neem extract. The extract is obtained in crimson red color. It is stored in cool and dark place and in the airtight container.

Fig. 1: Dried ethanoic Neem and Turmeric extract.

Formulation of Neem and Turmeric ointment

Table 1: Ointment base formulation.

Serial No.	Name of the Ingredient	Quantity taken
1.	Cetostearyl alcohol	4gm
2.	Hard paraffin	4gm
3.	Yelow soft paraffin	4gm
4.	Lanolin	4gm

Table 2: Herbal ointment formulation.

Serial No.	Name of the Ingredient	Quantity taken
1.	Prepared Neem extract	0.48gm
2.	Prepared Turmeric extract	0.48gm
3.	Ointment Base	16gm

Herbal ointment preparation procedure

a) Hard paraffin is weighed accurately to prepare ointment base which is placed in evaporating dish water bath. After the melting of hard paraffin remaining ingredients were added and stirred gently. Stirr the mixture homogeneously to mix and then cool the ointment base.

b) The Neem and Turmeric extract which is accurately weighed is added to the ointment base bylevigation method for the preparation of smooth paste. This paste must be 2 to 3 times of its weight of base. Gradually added more base until to form homogenous ointment. Finally it is transferred in suitable container.

Neem and Turmeric ointment

Evaluation test for herbal preparation

1. Color and odour

Physical parameters such as color and odour were examined by visual examination.

2. Consistency

Formulation was smooth and greediness is observed.

3. pH

The digital pH meter is used to measure the pH of herbal preparation. Ointment solution was prepared by using 100ml of distilled water and set aside for 2 hrs. pH was determined three timesfor the solution and average value was determined.

4. Spreadability

For the determination of spreadability the amount of sample is placed in between two slides andwhich compressed to uniform thickness by placing definite weight for definite time. Time required for the separation of two slides was known as spreadability. Spreadability is better when time taken for the separation of two slides is less. Spreadability was calculated by the formula:

$$S=MxL/T$$

Where,

S = Spreadability

M = Tide weight on upper slideL = Length of glass slide

T = Time taken for the separation of slides

5. Extrudability

Collapsible tube was used to fill the formulation. Extrudability was determined as weight ofointment required to extrude 0.5cm ribbon in 10 seconds.

6. Diffusion Study

Agar nutrient medium was prepared for diffusion study. A hole board was placed in the center ofand ointment. Time taken by ointment to get diffused through it was noted after 60 minutes.

7. Loss on Drying

For the determination of loss on drying the formulation was placed in petri-dish on water bath anddried at the temperature of 105*C.

8. Solubility

Miscible with chloroform and soluble in boiling water.

9. Washability

The formulation was applied on the skin and then the washing of ease extend of formulation withwater was checked.

10. Non irritancy testing

Herbal ointment preparation was applied on human skin and the effect was observed.

11. Stability Study

Testing of physical stability of herbal ointment was carried out for four weeks at various temperature conditions like 2*C, 25*C, and 37*C. Herbal ointment was found to be physically stable at various temperatures 2*C, 25*C and 37*C within four weeks.

RESULT AND DISCUSSION

The present study was done for the preparation and evaluation of herbal ointment. Herbal extract was prepared by using simple maceration process for obtaining better yield of extract. The chemical constituents and their activity does not harm to the body.

For the preparation of ointment Levigation method was used so uniform mixing of herbal extractwith the ointment base was occurred. It was stable during storage.

Physicochemical properties of ointment were studied which shows satisfactory results for extrudability, washability, spreadability, solubility, loss on drying etc. Stability study was also studied at different temperature conditions such as 2*C, 25*C, 37*C within four weeks. Not any change is observed in spreading ability, diffusion study as well as irritant effect.

Physicochemical evaluation of formulated ointment

Serial no.	Physicochemical parameters	Observation
1	Colour	Yellow
2	Odour	Characteristic
3	pH	6.0
4	Spreadability (seconds)	6 Sec
5	Consistency	Smooth
6	Loss On Drying	25%
7	Solubility	Soluble in boiling water, Miscible with Chloroform
8	Diffusion study (after 60 mins)	0.6 cm
9	Washability	Good
10	Non irritancy	Non irritant
11	Stability study at different temp.	Stable
12	Extrudability	0.4 gm

CONCLUSION

The final conclusion was obtained from this formulation is it helps to treat skin problems. From the ancient time the herbal products Neem and Turmeric are used for various medicinal purposes such as antifungal, anti-inflammatory, antibacterial etc. The turmeric and neem ointment could bethe media for the use of these medicinal properties easily and effectively as a simple dosage forms.

ACKNOWLEDGEMENT

The secret of success is undaunted motivation, dedication, confidence on self and above all the blessings of God. We bow in reverence to the almighty for bestowing upon me all this kindness that has helped us throughout the journey of our life. Success is an outcome of collaborated efforts aimed at achieving different goals. We hereby take this opportunity to acknowledge all those who have helped us in the completion of this work. With a sincere note of gratitude, we wish to express our deepest thanks, heartfelt indebtedness and regards to our respected teacher and guide, Ms. Ekta Chouthe Assist. Professor, at Shri sai institute of Pharmacy and research Chh. Sambhajinagar. Her rich experience, scientific vision, passion for knowledge, insightful direction and invaluable advices has always been a source of personal inspiration for us. With her illuminating guidance andincessant suggestions. We have been successful in keeping our spirits high throughout the pursuance of our project from a College. We would also like to express our heart-felt thanks to our respected Dr.Yuvraj Girbane, Principal at Shri sai institute of Pharmacy and research Chh. Sambhajinagar. For his valuable guidance, study support and making available the entire infrastructure and facilities

required to carryout this work. We wish to put on records our sincere thanks to our lecturers and also Non-Teaching staff who helped us in successfully completing this work & giving golden information about pharma arena with timely support.

We solicit our deep sense of appreciation and love to parents without their blessing this task would not have been accomplished. We bow our head with utter humility to them for their continuous source of energy, inspirations, and motivation. We would also thank to Mr. Aniruddha Joshi for their technical help, advises and providing row material. We consider us privileged to have seen an entity of almighty in them. Their strong godliness and pantheism enabled us to face the world without fear and with pedantic strength. Their trust has always inspired us to do our best.

We express our humble thanks to our dearest friends and entire classmate also our seniors for their constant inspiration, moral support and encouragement and making our B. Pharm so memorable. The dissertation work required help from lot of persons, some were near and dear and some were far but also dear one the page has not got the enough space to mention their names but there is a very comfortable space in the depth of our hearts so they got that.

To the whose presence we all just feel, the almighty God, whose love and caring hands always surround us, Thank you……..

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