



Herbal Topical Formulation for the treatment of Vaginal Infection: An Overview

Suman Gehlot^{1*}, Sumeet Dwivedi², Shailesh K. Gupta¹ and Satyaendra K. Shrivastava³

1, Department of Pharmacy, Mansarovar Global University, Sehore, (M.P.) - India

2, Faculty of Pharmacy, Oriental University, Indore (M.P.) - India

3, Parijat College of Pharmacy, Indore (M.P.) - India

Article info

Received: 10/01/2021

Revised: 22/02/2021

Accepted: 27/02/2021

© IJPLS

www.ijplsjournal.com

Abstract

Gynecological disorders include various diseases out of which vaginal infection i.e., vaginitis commonly known as vaginal infection caused by a fungus i.e., *Candida albicans* is very common and frequent especially among Indian women's. Vaginal candidiasis is the second most common vaginal infection and it is so frequent that after using allopathic herb, female tends to use herbal medication. It accounts for a quarter and about 85-95% are due to fungus *Candida albicans*. It has been noticed and recorded that about 75% of females pursue with vaginal candidiasis once in her life time, and about 50% twice and 5% women's 4 times in a year. The present paper focused of herbal topical formulation for the treatment of vaginal infection.

Key words: Vaginal infection, Topical formulation, Treatment

Introduction

Medicinal plants are a common link between the traditional and modern medical science as they are the main source of drugs and medicaments. In the early 20th century, 90% of drugs in most Pharmacopoeias were tincture extracts of pure compounds derived from the vegetable sources. During the last century various modern procedures have been adopted for the determination of biological activities of the plant extracts and the identification of active principles such as chromatographic analysis, spectroscopic estimations etc.

In the view of importance of medicinal plants as remedies to diseases, there is need of proper and documented investigation of the plants. Although medicinal plants have been used in the treatment of various disease and disorders of both animal and human from time being, but recently they are subjected to scientific studies.

It is true that not all medicinal plants are as useful as claimed traditionally, but still they have provided us a vast field to investigate and validate their folk-lore.

Gynecological disorders include various diseases out of which vaginal infection i.e., vaginitis is very common and frequent especially among Indian women's.

***Corresponding Author**

E.mail: sumangehlot81@gmail.com

Literature on herbal drugs revealed that a number of plants have been identified for the treatment of the same. A comprehensive work done by various scientist and research scholars in the treatment of women disorders were discussed below.

Herbal drugs for gynecological disorders

Bahera (2006) studied plants used for gynecological disorders by tribals of Mayurbhanj district, Orissa, India. In the present paper about 24 plant species belonging to 24 families were recorded which are used for the treatment of gynecological disorders. The paper enumerates part used, ethnomedicinal claims along with chemical and pharmacological actions of selected plants.¹ **Dwivedi *et al.*, (2008)** investigated folk lore uses of some plants by the tribes of Madhya Pradesh with special reference to their conservation. In the present paper authors has revealed about 80 plant species such as *Abrus precatorious*, *Bauhinia variegata*, *Mucuna prurita*, etc., which are used for the treatment of several disorders including gynecological disorders.² **Shukha *et al.*, (2008)** studied indigenous medicine used for treatment of gynecological disorders by tribal of Chhattisgarh, India. The present paper enumerates the use of several plant species by tribal's of region used for the treatment of gynecological disorders. It was also suggested in present paper that future studies on drug development will lead to development of several new drugs and their formulation.³ **Dwivedi *et al.*, (2010)** investigated ethno-medicinal plants used to treat gynecological disorders by tribal people of Madhya Pradesh, India. The present paper deals with use of various herbs in the treatment of gynecological disorders by the tribals of Madhya Pradesh.⁴ **Nath *et al.*, (2010)** revealed traditional knowledge on ethno-medicinal uses prevailing in tribal pockets of Chhindwara and Betul Districts, Madhya Pradesh, India. In present communication 77 plant species from Chhindwara and 50 plant species from Betul district has been identified by local peoples and used as paste, powder, juice, decoction and extract for the treatment of women disorders.⁵ **Dwivedi and Kohli (2012)** investigated folk-lore uses of *Guizotia abyssinica* (L.F) Cass. among tribal and rural people of Madhya Pradesh. In the present paper it was revealed that the selected plant species is used for the treatment of several types of female disorders.⁶

Shukla *et al.*, (2012) studied a case study of medicinal plants used by local women for gynecological disorders in Karaikal (U.T. of Puducherry). Total 44 plants were reported to be used as gynecological disorders.⁷ **Shrivastava (2013)** studied ethnomedicinal plants used for treatment of gynecological disorders by tribal of Dindori district of Madhy Pradesh. In the present paper several plants were recorded as claimed by tribals of the region to be used as gynecological disorders.⁸ **Gupta and Solanki (2013)** studied Herbal folk remedies used in treatment of gynecological disorders by tribals of Simalwara region, Dungarpur, Rajasthan. In this investigation 27 species along with their medication has been reported.⁹ **Sharma *et al.*, (2013)** studied herbal remedy for gynecological problems in ethnic communities of Jharkhand state, India. The present paper enumerates use of 30 plant species in 32 ethnic communities of Jharkhand using herbs for the treatment of gynecological problems.¹⁰ **Sadeghia and Mahmood (2014)** studied Ethno-gynecological knowledge of medicinal plants used by Baluch tribes, southeast of Baluchistan, Iran. In this paper total of eighty plant species belonging to 43 botanical families were documented. It was also revealed that some of the herbs viz., *Nigella sativa*, *Pistacia atlantica*, *Anethum graveolens*, *Carum carvi* and *Trigonella foenum-graecum* have excellent results in women's disorders especially vaginal infection.¹¹ **Das *et al.*, (2014)** investigated a few traditional medicinal plants used as Antifertility agents by ethnic people of Tripura, India. This paper represents detailed profile of 55 plant including scientific name, family, common name, parts used, activities, mode of preparation and dosage. Used for the treatment of disorders including antifertility.¹² **Singh *et al.*, (2014)** revealed study of some ethnomedicinal plants used to cure some gynaecological disorders from Anpara-renukoot region of Sone Bhadra district. Total 24 plant species were recorded to cure gynecological disorders by tribals of Anpara-Renukoot region. In this paper plant profile along with botanical name, family, local name and parts used to cure gynaecological disorders were discussed.¹³ **Van Andel *et al.*, (2014)** studied medicinal plants used for menstrual disorders in Latin America, the Caribbean, sub-Saharan

Africa, South and Southeast Asia and their uterine properties.¹⁴

Das *et al.*, (2015) investigated the use of medicinal plants for the treatment of gynaecological disorders in the Eastern parts of India. About 100 indigenous medicinal plants have been recorded. The name of the plants, the parts used and the method of application have been investigated in details. It was suggested that in future these plant may be accessed for various active phytochemicals and pharmacological screening to formulate potent drugs.¹⁵ **Singh *et al.*, (2016)** investigated use of ethno-medicinal plants for treatment of gynaecological disorders by tribal women. The present paper enumerates the use of several medicinal plants from in the treatment of gynaecological disorders by the tribal women's of Jabalpur, Madhya Pradesh. Further studies were suggested to validate the claims and herbal drug development for treatment of such disorder.¹⁶ **Laddimath and Rao (2016)** studied herbal medicine used to treat primary infertility in women by traditional practioners of Vijayapur (Bijapur) district of Karnataka, India.¹⁷

Vaginal Candidiasis: A review

Vaginal candidiasis is the second most common vaginal infection and it is so frequent that after using allopathic herb female tends to use herbal medication. It accounts for a quarter and about 85-95% are due to fungus *Candida albicans*. It has been noticed and recorded that about 75% of females pursue with vaginal candidiasis once in her life time, and about 50% twice and 5% women's 4 times in a year.¹⁸⁻²³ Some of the works done by authors are mentioned below:

Goode *et al.*, (1994) studied infectious vaginitis, selecting therapy and preventing recurrence.²⁴ **Guaschino *et al.*, (2001)** investigated efficacy of maintenance therapy with topical boric acid in comparison with oral itraconazole in the treatment of recurrent vulvovaginal candidiasis.²⁵ **Vacheva-Dobrevski *et al.*, (2003)** investigated comparative study of itraconazole and fluconazole therapy in vaginal candidosis.²⁶ **Sovizi (2007)** studied comparison of the effect of *Nigella Sativa* suppository with clotrimazol vaginal tablet in treatment of vaginal candidiasis.²⁷ **Johnson *et al.*, (2008)** discussed about evidence-based emergency medicine/rational clinical examination, diagnostic utility of physical examination, history, and

laboratory evaluation in emergency department patients with vaginal complaints.²⁸ **Fouladi *et al.*, (2009)** reported the comparison of *Zataria multiflora* Boiss (Avishan Shirazi) and Clotrimazol vaginal cream in the treatment of candidiasis vaginitis.²⁹ **Akbarzadeh *et al.*, (2010)** discussed about causes and clinical symptoms of vaginal candidiasis in patients referring to selective clinics of Shiraz University of Medical Sciences.³⁰ **Mousavi *et al.*, (2010)** studied a comparative study on the therapeutic effect of the propolis vaginal cream and clotrimazol on candida vulvovaginitis in reproductive aged women.³¹ **Bahadoran *et al.*, (2011)** investigated the therapeutic effect of vaginal cream containing garlic and thyme compared to clotrimazole cream for the treatment of mycotic vaginitis.³² **Roobahani *et al.*, (2013)** studied effect of *Myrtus communis* capsule on vaginal candidiasis treatment.³³ **Janani *et al.*, (2013)** studied a comparative study of effect of myrtus vaginal cream and clotrimazol vaginal cream in the treatment of vaginal candidiasis.³⁴ **Fard *et al.*, (2015)** studied therapeutic effects of *Nigella sativa* Linn (Black Cumin) on *Candida albicans* vaginitis.³⁵ **Kordi *et al.*, (2015)** investigated comparison of the effect of garlic extract vaginal douche and clotrimazol vaginal cream in the treatment of women with vaginal candidiasis.³⁶ **Mehni *et al.*, (2015)** studied therapeutic effects of *Bunium persicum* Boiss (Black Zira) On *Candida albicans* vaginitis.³⁷ **Farshbaf-Khalili *et al.*, (2016)** discussed comparing the effect of garlic, *Zataria multiflora* and clotrimazole vaginal cream 2% on improvement of fungal vaginitis: a randomized controlled trial.³⁸ **Ballabh and Chaurasia (2011)** investigated herbal formulations of desert plants used for gynecological disorders. 12 very common types of gynecological disorders were found to be treated by traditional herbalist using eight types of herbal formulations.³⁹ **Lakshmi and Gupta (2014)** studied Ayurvedic preparations and gynaecological disorders. Several types of ayurvedic preparations were reported to be used in the treatment.⁴⁰ **Khan *et al.*, (2016)** studied evaluation of toxicological profile of a polyherbal formulation. A herbal formulation formulated was evaluated for its toxicological profile and was found to be effective for the treatment of women

disorders such as menorrhagia, metrorrhagia, leucorrhoea, irregular menstrual cycle, premenstrual syndrome and post-menopausal bleeding.⁴¹

References

1. K. K. Bahera, "Plants Used for Gynecological Disorders by Tribals of Mayurbhanj District, Orissa, India", *Ethnobotanical Leaflets*, Vol. 10, pp. 129-138, 2006.
2. S. Dwivedi, A. Dwivedi and S. N. Dwivedi, "Folk Lore Uses of Some Plants by the Tribes of Madhya Pradesh with Special Reference to Their Conservation", *Ethnobotanical Leaflets*, Vol. 12, pp. 763-771, 2008.
3. R. Shukha, M. Chakravarty and M. P. Gautam, "Indigenous medicine used for treatment of gynecological disorders by tribal of Chhattisgarh, India", *Journal of Medicinal Plants Research*, Vol. 2(12), pp. 356-360, 2008.
4. S. Dwivedi, R. Tripathi and S. N. Dwivedi, "Ethno-medicinal plants used to treat gynecological disorders by tribal people of Madhya Pradesh, India", *International Journal of Pharmacy and Life Sciences*, Vol. 1(3), pp. 160-169, 2010.
5. V. Nath and P. K. Khatri, "Traditional knowledge on ethno-medicinal uses prevailing in tribal pockets of Chhindwara and Betul Districts, Madhya Pradesh, India", *African Journal of Pharmacy and Pharmacology*, Vol. 4(9), pp. 662-670, 2010.
6. S. Dwivedi and S. Kohli, "Folk-lore uses of *Guizotia abyssinica* (L.F) Cass. among tribal and rural people of Madhya Pradesh", *International Journal of Pharmacy Teaching & Practices*, Vol. 3(4), pp. 434-437, 2012.
7. M. Shukla, Y. R. Begum and M. Mishra, "A Case study of medicinal plants used by local women for gynecological disorders in Karaikal", *Journal of Phytology*, Vol. 4(5), pp. 09-12, 2012.
8. A. Shrivastava, "Ethnomedicinal plants used for treatment of gynecological disorders by tribal of Dindori district of Madhya Pradesh", *International Journal of Pharmacy and Life Sciences*, Vol. 4(12), pp. 3185-3189, 2013.
9. U. Gupta and H. Solanki, "Herbal Folk Remedies used in Treatment of Gynecological Disorders by Tribals of Simalwara Region, Dungarpur, Rajasthan", *International Journal of Pure and Applied Sciences and Technology*, 17(1), pp. 100-107, 2013.
10. L. K. Sharma, H. P. Sharma, B. Kumar, A. Patnaik, N. K. Pandey, R. K. Pandey and N. Kumar, "Herbal Remedy for Gynecological Problems In Ethnic Communities of Jharkhand State, India" *American Journal of Pharm Tech Research*, Vol. 3(6), pp. 559-570, 2013.
11. Z. Sadeghia and S. Mahmood, "Ethno-gynecological knowledge of medicinal plants used by Baluch tribes, southeast of Baluchistan, Iran" *Rev Bras Farmacogn*, Vol. 24, pp. 706-715, 2014.
12. B. Das, A. D. Talukdar and M. D. Choudhary, "A Few traditional medicinal plants used as Antifertility agents by ethnic people of Tripura, India", *International Journal of Pharmacy and Pharmaceutical Sciences*, Vol. 6(3), pp. 47-53, 2014.
13. R. Singh, D. K. Srivastava and P. Singh, "Study of some ethnomedicinal plants used to cure some gynaecological disorders from Anpara-renukoot region of Sone Bhadra district", *Indian Jour. Life. Sci.*, Vo. 4(1), pp. 85-87, 2014.
14. T. V. Andel, H. J. deBore, J. Barends and I. Vandebroek, "Medicinal plants used for menstrual disorders in Latin America, the Caribbean, sub-Saharan Africa, South and Southeast Asia and their uterine properties: A review", *Journal of Ethnopharmacology*, Vol. 155, pp. 992-1000, 2014.
15. D. C. Das, N. K. Sinha and M. Das, "The use of medicinal plants for the treatment of gynaecological disorders in the Eastern parts of India" *Indian Journal of Obstetrics and Gynaecology*, Vol. 2(1), pp. 16-27, 2015.

16. J. Singh, R. Rana and S. Gupta, "Use of ethno-medicinal plants for treatment of gynaecological disorders by tribal women", *World Journal of Pharmaceutical Research*, Vol. 5(4), pp. 1261-1265, 2016.
17. A. Laddimath and S. Rao, "Herbal medicine used to treat primary infertility in women by traditional practitioners of Vijayapur (Bijapur) district of Karnataka, India", *International Letters of Natural Sciences*, Vol. 50, pp. 27-32, 2016.
18. www.ebcj.mums.ac.ir
19. R. M. Panduranga, S. Prasanthi and S. T. V. V. Reedi, "Medicinal plants in folk medicine for women's diseases in use by Konda Reddis", *Indian J Traditional Knowledge*, Vol. 10(3), pp. 563-567, 2011.
20. R. Rekka, S. Muruges and R. Prabakaran, "Plants used by Malayali Tribes in Ethnogynaecological disorders in Yercaud hills, Southern Eastern Ghats, Salem District, Tamil Nadu", *Sci Res Report*, Vol. 3(2), pp. 190-192, 2013.
21. P. V. Tiwari, D. N. Misra and C. Chaturvedi, "Medicinal preparation used for obstetrics & gynaecological disorders in medieval India", *Nagarjuna*, Vol. 25, pp. 124, 1982.
22. C. R. Tarafdar, "Ethnogynaecology in relation to plants, Part-II, Plants used for abortion", *J. Econ Taxon Bot*, Vol. 4, pp. 507, 1983.
23. J. P. Yadav, S. Kumar and P. Siwach, "Folk medicine used in gynecological and other related problems by rural population of Haryana", *Indian J Traditional Knowledge*, Vol. 5(3), pp. 323-326, 2006.
24. M. A. Goode, K. Grauer and J. G. Gums, "Infectious vaginitis. Selecting therapy and preventing recurrence", *Postgrad Med.*, Vol. 96(6), pp. 85-88, 1994.
25. S. Guaschino, F. De Seta, A. Sartore, G. Ricci, D. De Santo and M. Piccoli, "Efficacy of maintenance therapy with topical boric acid in comparison with oral itraconazole in the treatment of recurrent vulvovaginal candidiasis", *Am J Obstet Gynecol.*, Vol. 184(4), pp. 598-602, 2001.
26. R. V. Dobrevski, S. Kovachev, A. Nacheva, S. Stoev and N. Vasilev, "Comparative study of itraconazole and fluconazole therapy in vaginal candidosis", *Akush Ginekol.*, Vol. 43(1), pp. 20-23, 2003.
27. B. Sovizi, "Comparison of the effect of Nigella Sativa suppository with clotrimazol vaginal tablet in treatment of vaginal candidiasis", *Mashhad University of Medical Sciences*, 132-138, 2007.
28. E. Johnson and N. Berwald, "Evidence-based emergency medicine/rational clinical examination abstract. Diagnostic utility of physical examination, history, and laboratory evaluation in emergency department patients with vaginal complaints", *Ann Emerg Med.*, vol. 52(3), pp. 294-297, 2008.
29. Z. Fouladi, P. Afshari, T. Gharibi and M. A. Dabbagh, "The comparison of Zataria multiflora Boiss (Avishan Shirazi) and Clotrimazol vaginal cream in the treatment of candidiasis vaginitis", *Iran South Med J*. Vol. 12(3), pp. 214-24, 2009.
30. M. Akbarzadeh, B. Bonyadpoure and K. Pacshir, "Causes and clinical symptoms of vaginal candidiasis in patients referring to selective clinics of Shiraz University of Medical Sciences", *Arak Med Univ J.*, Vol. 13(3), pp. 12-20, 2010.
31. M. S. Mousavi, T. Keshavarz, H. Montaseri, K. Pakshir, M. Yazdani and N. Zare, "A comparative study on the therapeutic effect of the propolis vaginal cream and clotrimazol on candida vulvovaginitis in reproductive aged women", *J Isfahan Med Sch.*, Vol. 28(117), pp. 1099-1107, 2010.
32. P. Bahadoran, F. K. Rokni and F. Fahami, "Investigating the therapeutic effect of vaginal cream containing garlic and thyme compared to clotrimazole cream for the treatment of mycotic vaginitis", *Iran J Nurs Midwifery Res.*, Vol. 15(1), pp. 343-349, 2011.
33. F. Roozbahani, N. Kariman, F. Mojab and M. Nasiri, "Effect of Myrtus communis capsule on vaginal candidiasis treatment",

- Pejouhandeh J., Vol. 18(5), pp. 242-249, 2013.
34. F. Janani, S. Akbari, B. Delfan, T. Tolabi, F. Ebrahimzadeh and M. Motamedi, "A comparative study of effect of Myrtus vaginal cream and clotrimazol vaginal cream in the treatment of vaginal candidiasis", *Yafteh.*, Vol. 13(1), pp. 32-41, 2010.
35. F. A. Fard, S. T. Zahrani, A. A. Bagheban and F. Mojab, "Therapeutic effects of *Nigella sativa* Linn. (Black Cumin) on *Candida albicans* vaginitis", *Arch Clin Infect Dis.*, Vol. 10(1), pp. e22991, 2015.
36. M. Kordi, N. Jahangiri, H. Rakhshandeh and H. Gholami, "Comparison of the effect of garlic extract vaginal douche and clotrimazol vaginal cream in the treatment of women with vaginal candidiasis", *Iran J Obstet Gynecol Infertil.*, Vol. 8(2), pp. 33-40, 2005.
37. S. Mehni, S. T. Zahrani, M. T. Sarvtin, F. Mojab, M. Mirzaei and H. Vazirnasab, "Therapeutic effects of *Bunium persicum* Boiss. (Black Zira) on *Candida albicans* vaginitis", *Biom Pharmacol J.* Vol. 8(2), pp. 1103-1109, 2015.
38. A. F. Khalili, B. M. Ghalehbin, M. Shahnazi, S. Asghari, Y. Javadzadeh and P. Azghani, "Comparing the effect of garlic, *zataria multiflora* and clotrimazole vaginal cream 2% on improvement of fungal vaginitis: a randomized controlled trial", *Iran Red Crescent Med J.*, Vol. 18(12), pp. e29262, 2016.
39. B. Ballabh and O. P. Chaurasia, "Herbal Formulations from Cold Desert Plants Used For Gynecological Disorders", *Ethnobotany Research & Applications*, Vol. 9(1), pp. 59-66, 2011.
40. V. Lakshmi and R. K. Gupta, "Ayurvedic preparations and gynaecological disorders" *International Journal of Ayurveda & Alternative Medicine*, Vol. 5(2), pp. 10-14, 2014.
41. R. A. Khan, M. Aslam and S. Ahmed, "Evaluation of Toxicological Profile of a Polyherbal Formulation", *Pharmacology & Pharmacy*, Vol. 7, pp. 56-63, 2016.

Cite this article as:

Gehlot S., Dwivedi S., Gupta S.K. and Shrivastava S. K. (2021). Herbal Topical Formulation for the treatment of Vaginal Infection: An Overview, *Int. J. of Pharm. & Life Sci.*, 12(2): 57-62.

Source of Support: Nil

Conflict of Interest: Not declared

For reprints contact: ijplsjournal@gmail.com