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Research Article

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Identification of Steroids in Different Ayurvedic Formulations Available in Local Market

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ABSTRACT

Ayurveda, the science of life is an ancient system of medicine sprouted out in India. The basic formulations in Ayurveda are the Herbomineral preparations like Bhasmas, churnas, lehas, asavas, arishtas etc., and the usage of these herbomineral preparations increased drastically these days. Some of the available formulations are being adulterated with steroids to increase the efficiency of herbomineral preparations. Repeated use of steroids both internally and externally leads to severe side effects and hence an attempt has been made to identify the presence of steroids in the Ayurvedic formulations that are available in the local market of Anantapuramu. 25 formulations of different categories are purchased and evaluated for the presence of steroids by chemical tests i.e. Salkowski test, Burchard reaction and Libermann-Burchard reaction. From this work it can be concluded that some of the ayurvedic formulations which promises to treat illness of the body may shows severe side effects as they were adulterated with steroids.

Keywords: Steroids, Herbomineral preparations, Salkowski test, Burchard reaction and Libermann-Burchard reaction

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1. Introduction

Herbal drug is a chief constituent intraditional medicine and a common constituent in ayurvedic, homeopathic,

naturopathic and other medicine systems. Herbs are usually considered as safe since they belong to natural sources. The

use of herbal drugs due to toxicity and side effects of allopathic medicines, has led to rapid increase in the number of herbal drug manufacturers [1]. For the past few decades, herbal drugs have been more and more consumed by the people with no prescription. These drugs have survived real world testing and thousands of years of human testing. Some drugs have been discontinued due to their toxicity, while others have been modified or combined with additional herbs to counterbalance side effects [2].

To achieve public faith and to bring herbal product into mainstream of today's health care structure, the researchers, manufacturers and the regulatory authorities must follow rigorous scientific methodologies and comprehensive clinical trials to ensure the quality and lot-to-lot consistency of the herbal products [3]. Correct identification of the desired plant, purification of the intermediates and the final products upto its expected standard of purity and uncompromising consistency of the product quality should be the basis of the production of herbal remedies [4]. As the formulations are adulterated with steroids an attempt has made to know the presence of steroids in the formulations that are available in the local market.

2. Experimental

The materials used for the present study was purchased from local market of Anantapuramu. A total of 24 formulations of different categories were purchased and were coded AF1, AF2, AF3,.....AF24 respectively.

Methods of Identification of Steroids:

Salkowski Test: Treat the extract with few drops of conc. Sulphuric acid, red colour at lower layer indicates presence

of steroids and formation of greenish yellow coloured lower layer indicates presence of triterpenoids [5].

Libermann – Burchard Test:

Dissolve the extract in chloroform, and treat with few drops of acetic anhydride, boil and cool. Then add conc. sulphuric acid from the sides of the test tube, brown ring is formed at the junction of two layers and upper layer turns green which shows presence of steroids and formation of deep red colour indicates presence of triterpenoids.

Libermann Test:

Mix 3ml extract with 3ml of acetic anhydride. Heat & cool. Add few drops of conc. Sulphuric acid, blue colour appears indicates presence of steroids [6].

3. Results and Discussion

In the present work Ayurvedic formulations of different categories were collected and were evaluated for presence of steroids. Among the 24 formulations tested, a total of 7 formulations were found to contain steroids (Table No 1). Formulation AF1 which is used as “Anti-Diabetic” was containing steroids and the same was proved by Salkowski test, Lieberman Burchard test, Lieberman test. Formulation AF3 which is used as “Anti-asthmatic agent” was shown positive (+ve) results for steroids. Formulation AF5 used for treating Rheumatism, Formulation AF9 used in “Gynecological Problems”, Formulation AF14 which is used in “Cough & Cold”, Formulation AF22 which is used in “Allergic rhinitis, Allergic bronchitis” and Formulation AF24 “Acnovin Cream”, which is used in “Acne vulgaris” were shown positive (+ve) results for steroids. The remaining Ayurvedic formulations were shown negative (-ve) results for steroids (Figure.1).

Table 1: Results of presence of steroids in Ayurvedic formulations

S.No	Code	Category	Results		
			Salkowski Test	Libermann – Burchard Test	Libermann Test
1	AF1	Anti diabetic	+ve	+ve	+ve
2	AF2	Anti diabetic	-ve	-ve	-ve
3	AF3	Anti asthmatic	+ve	+ve	+ve
4	AF4	Anti asthmatic	-ve	-ve	-ve
5	AF5	Anti rheumatoid	+ve	+ve	+ve
6	AF6	Anti rheumatoid	-ve	-ve	-ve
7	AF7	Analgesic	-ve	-ve	-ve
8	AF8	Gynaec problems	-ve	-ve	-ve
9	AF9	Gynaec problems	+ve	+ve	+ve
10	AF10	Skin disorders	-ve	-ve	-ve
11	AF11	Ano – rectal problems	-ve	-ve	-ve
12	AF12	Ano – rectal problems	-ve	-ve	-ve
13	AF13	Cough & cold	-ve	-ve	-ve
14	AF14	Cough & cold	+ve	+ve	+ve
15	AF15	Anti asthmatic	-ve	-ve	-ve
16	AF16	Anti Hyperthyroidism	-ve	-ve	-ve
17	AF17	Anti asthmatic	-ve	-ve	-ve
18	AF18	Immunostimulant	-ve	-ve	-ve
19	AF19	GIT disorders	-ve	-ve	-ve
20	AF20	Immunostimulant	-ve	-ve	-ve
21	AF21	Immunomodulant	-ve	-ve	-ve
22	AF22	Allegric rhinitis &	+ve	+ve	+ve

		Bronchitis			
23	AF23	Anti scars	-ve	-ve	-ve
24	AF24	Anti acne	+ve	+ve	+ve

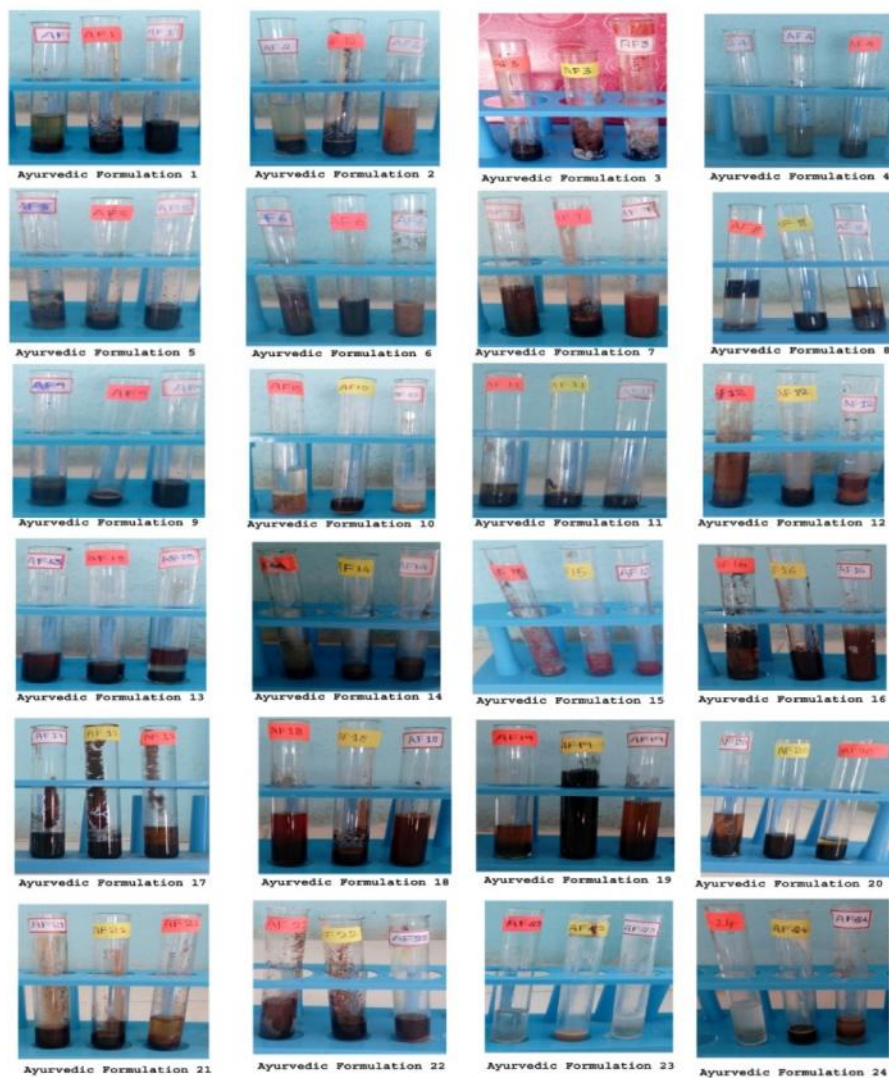


Figure 1: Results of tests for steroids in Ayurvedic formulations AF1 to AF24

4. Conclusion

Different categories of Ayurvedic Formulations were selected and evaluated for the presence of steroids using chemical tests and we found 7 formulations of different categories viz., Anti-Diabetics, Anti-Asthmatics, Anti-Rheumatics, Gynecological Problems treated agents, Cough & Cold treated agents, Allergic rhinitis, Allergic bronchitis treated agents, Acne vulgaris treated agents were found to contain steroids and the remaining were not. Even though we don't know the particular steroid by which the formulation was adulterated, but it is dangerous for humans as the steroids are harmful.

5. References

- [1] Kalyani Pathak, Ratna Jyoti Das; Herbal Medicine- A Rational Approach in Health Care System; *International Journal of Herbal Medicine* 2013; 1 (3): 86-89

- [2] M. Mosihuzzaman and M. Iqbal choudhary; Protocols on Safety, Efficacy, standardization and Documentation of Herbal medicine; *Pure Appl. Chem.*,2008; Vol. 80, No. 10, pp. 2195–2230.
- [3] Kalyan Kumar Rana and Suparna Rana; Review on Present Status and Future of Herbal Medicine; *The Beats of Natural Sciences*. 2014, 2(1).
- [4] T.Saravanan and M.Subha ; Corticosteroids-Its role in oral mucosal lesions; *International Journal of Pharma and Bio Sciences*;2014; ISSN0975-6299; 5(4): (B) 439 – 446.
- [5] C.K. Kokate, A.P.Purohit and S.B.Gokhale ; Pharmacognosy text book; Published by Nirali Prakashan, pp: A.27.
- [6] Alka Agarwal, I.J.Singhvi, D.Bebe, K. Sharma, S.K. Gupta, G. Karwani, M.Kumawat; Evaluation Of Steroids In Face Creams Of Different Marketed Brands. *International Journal of Pharmacy & Technology*. 2015, 3(2): 2480-2486.