

A Review On Hibiscus Rosasinensis: A Rural Traditional Medicine for Contraception

Sonali Bhakta*, Shonkor Kumar Das

Bioresearch Laboratory, Department of Anatomy and Histology,
Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh
Email: sonali.dvm@gmail.com

Abstract: *Traditional medicines are practiced worldwide for regulating fertility since ancient times. Still the rural population mainly depends upon these plants for the sake of family planning and to induce abortion as the plants are available and safe for the health. Nearly 80% of the world populations rely on traditional medicines for primary health care specially contraception. Although there is a rapid development in allopathic medicine, the faith has not been degraded towards herbal due to its side effects. Even the allopathic medicines are also very costly which is beyond the capacity of the rural people. Hibiscus rosasinensis is a very medicinally active plant of the family Malvaceae and has the abortifacient or contraceptive effects. This plant is very frequently used by the rural people though they don't know the actual pharmacological index of the plant through which it acts on the testis or ovary for the purpose of contraception. This review may help the researchers to deal with the further pharmacological investigation of this medicinal plant.*

Keywords: Hibiscus rosasinensis, traditional medicine and contraception.

1. INTRODUCTION

Overpopulation is a global problem with the grave implications for the future. Calls have increased for a wider availability of family planning facilities, and also for the men to share in this responsibility [1]. Nearly 80% of the world populations rely on the traditional medicines for primary health care, most of which involve the use of plant extracts [13, 14].

Traditionally the tribal women prefer plant medicines rather than modern medicines for menstrual trouble, conception disorders, birth control practices, sterility, abortion etc. Abortifacients are drugs or agents that cause abortion i.e. expulsion of fetus permanently, particularly at any time before it is viable or capable of sustaining life [4]. Common abortifacients used in performing medical abortions include mifepristone, which is typically used in conjunction with misoprostol in a two-step approach [5].

Hibiscus rosasinensis well known member of the family Malvaceae, Hibiscus rosasinensis grows as an evergreen herbaceous plant. A native to tropical and sub-tropical regions, this plant is extensively cultivated as an ornamental plant. It bears large flowers on the bushy hedges. These enormous flowers are usually dark red in color and are not usually fragrant. The flower is also widely used by the follower of the Hindu religion for worship. Grown in different regions of Asian continent, these beautiful flowers are denoted by several other names such as China rose [2].



Fig 1: Flower of Hibiscus rosasinensis

2. TRADITION OF USING OF HIBISCUS ROSASINENSIS

The people who are staying in the rural areas are very poor and quite unconscious about the family planning. Among them some are conscious about the family planning but they prefer to use the herbal or the traditional products for the purpose [12]. Regarding the matter of contraception they profusely use the flower of *Hibiscus rosasinensis*. But they don't know the pharmacology behind that.

3. PHYTOCHEMICALS OF HIBISCUS ROSASINENSIS

Leaves and stems contain β -sitosterol, stigmasterol, taraxeryl acetate and three cyclopropane compounds and their derivatives. Flowers contain cyanidin diglucoside, flavonoids and vitamins, thiamine, riboflavin, niacin and ascorbic acid. Quercetin-3-diglucoside, 3,7-diglucoside, cyanidin-3,5-diglucoside and cyanidin-3-sophoroside-5-glucoside have been isolated from deep yellow flowers; all above compounds and kaempferol-3-xylosylglucoside have been isolated from ovary white flowers [9].

4. REASONS FOR USING THE HIBISCUS ROSASINENSIS FLOWER

Though *Hibiscus rosasinensis* is a very traditional plant and available anywhere in this subcontinent so the people get this plant without any harassment. It does not need any money to collect the flower and use this, so this is free of cost. Rather people also know that the herbal products are safe for the health, it does not leave any baleful effects on the body system. From the very ancient time people are using this so the rural people has a faith on the flower and trust that they will definitely get the result by using the flower at a regular basis [10]. The flower is helpful for contraception in both the male and female.

5. PHARMACOLOGICAL PHENOMENA OF HIBISCUS ROSASINENSIS FOR CONTRACEPTION

For the male the chemical constituent present in the flower acts on the testis. The histological feature of the testis becomes deviated from the normal [7]. The number of the seminiferous tubules becomes reduced and the amount of the sperm (matured) within the lumen of the seminiferous tubules decreased. The number of the sertoli and leydig cells also reduced in amount [3].

In case of the female, the effects of the phytochemicals of the flower exert on the ovary. The proper development of the follicles is inhibited and the number of the follicles also decreased in amount. Sometimes scar tissues can also be found in the granulosa layer [11].

Several articles and ancient literatures have shown that the flowers of this plant possess antifertility activity, like antimplantation, abortifacient in rodents [6]. Implantation is a very crucial event in reproductive physiology. Several biochemical, biophysical and hormonal changes take place prior to this event. Several studies have shown that the endometrial membrane conditions are important blastocyst implantation progesterone, estrogen, oxyradical and antioxidant systems regulate implantation [8].

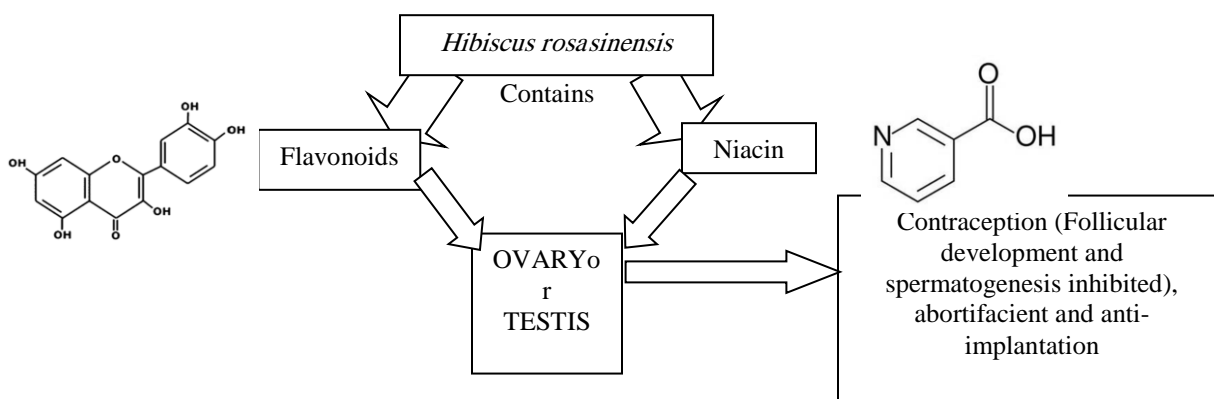


Fig 2: Mechanism of *Hibiscus rosasinensis* to act as the contraceptive

6. CONCLUSION

The population of the world including the Indian subcontinent is increasing alarmingly which is insisting us to control the birth as a prime concern, becoming a headache for the government also. It is a common phenomenon that the population in the rural areas of the country increases at an alarming rate which proves their ignorance of the matter. Especially for the rural people it is very difficult to raise their concern of controlling the birth. People of the rural areas use this rural traditional plant (*Hibiscus rosasiensis*) as the contraceptive which has the best use without leaving any harmful effects on the body rather its cheaper and available as well. It is needed to have more phytochemical investigation, standardization, dose determination and cost effective analysis for the further appropriate use of this plant.

REFERENCES

- [1] Sathiyaraj K, Sivaraj A, Thirumalai T, Senthikumar B. Ethnobotanical study of antifertility medicinal plants used by the local people in Kathiyavadi village, Vellore District, Tamilnadu, India, Asian Pacific Journal of Tropical Biomedicine. 2006; 20 (2): 574-577
- [2] Kumar A and Singh A. Review on Hibiscus rosasiensis. International Journal of Research in Pharmaceutical and Biomedical Sciences, 3: 534-538
- [3] Reddy CM, Murthy DRK, Patil SB. Antispermatic and androgenic activities of various extracts of Hibiscus rosasiensis in albino mice. Indian Journal of Experimental Biology. 1997; 35:1170-1174
- [4] Jain S.K. Methods and Approaches in Ethnobotany. Scientific publishers, Jodhpur. 1964.
- [5] Pradhan DK, Mishra MR, Mishra A, Panda AK, Behera RK, Jha S, Chodhury S. Comprehensive review of plants used as contraceptives. International Journal of Pharmaceutical Sciences and Research. 2012; 4(1): 148-15
- [6] The wealth of India. Raw materials. National Institute of Science Communication and Information Resources, New Delhi. 2012; 5:91.
- [7] Nidhi M, Vijay LT, Ashoke M. Evaluation of the medicinal properties of Hibiscus rosasiensis in male Swiss albino mice. International Journal of Pharmaceutical and Clinical Research. 2009; 1(3): 106-111.
- [8] Pakrashi A. Flowers of Hibiscus rosasiensis, a potential source of contraceptives. III: Interceptive effect of benzene extract in mouse. Contraception. 2010; 34(5): 523-536.
- [9] Rastogi Ram P, Mehrotra BN, 1993. Compendium of Indian Medicinal Plants. Vol. 2, Central Drug Research Institute, Lucknow and Publications & Information Directorate, New Delhi, India.
- [10] Vasudeva N, Sharma SK. Post-coital antifertility activity of Hibiscus rosasiensis Linn. roots. Evidence Based Complementary and Alternative Medicine. 2008; 5: 91-94.
- [11] Batta SK, Santhakumari G. The antifertility effect of Ocimum sanctum and Hibiscus rosasiensis. Indian Journal of Medical Research, 1970; 59: 77-78.
- [12] Singh MP, Singh RH, Udupa KN. Antifertility activity of a benzene extract of Hibiscus rosasiensis flowers in female albino rats. Planta Med. 1982; 44: 171-174.
- [13] Lewington A. Medicinal plants and plant extracts: A review of their importation in to the Europe, Cambridge, UK. Traffic International. 2010.
- [14] Sandhya B, Thomas A, Isabel W. Ethnomedicinal plants used by the valaiyan community of piranmalai hills (reserved forest), tamilnadu, India. A pilot study. African Journal of Traditional Complementary & Alternative Medicine. 2006;1-114