



A REVIEW ON MULTIPLE HERBAL EFFECTS OF HIBISCUS SABDARIIFA IN A DAILY LIFE.

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ABSTRACT.

Hibiscus sabdariffa is a medicinal plant which is commonly also known as 'red sorrel' or "roselle" belong to family malvaceous, widely used in the treatment of anaemia. it consists lots of properties in the treatments various type of problems. It shows hypolipidemic, high blood pressure lowering effects, antidiabetic, activity, anti-helminthic and antimicrobial infectant-oxidant effect and other pharmacological effects. hibiscus tea widely used which is caffeine free herbal tea.¹ hibiscus sabdariffa, hibiscus acetosella and jatropa gairaphilia are the most common Plants used in the treatment of anaemia. In this review paper we studied many review papers and find many properties of the plat hibiscus. Uses of the plants are given below.

Key words. Hibiscus sabdariffa, malvaceous antidiabetic herbal, minerals, anti-oxidant, hibiscus acetosella, hibiscus

INTRODUCTION.

Anemia is a condition in which the number of RBCs IS reduced. anemia is a common nutritional deficiency in disorder and a global public health problem that affects developing countries, INDIA is one of them about 40% of people are suffering from anemia. The caucuses of anemia are blood loss. Especially women during the menstrual cycle, and lack of red blood cell production. [due to iron deficiency] and high rate of red blood cell destruction. Characterizing the anemia as microcytic, normocytic, or macrocytic based on the mean corpuscular volume. Will aid in the workup management. This review article gives you basic information regarding hibiscus sabdariffa used in the treatment of anemia. In 2019, the universality of anemia in women 29.9% of women aged 15 to 49 years suffered from anemia 2019. Children ration 39.8% at aged 6 to 59 months or 60.2% in the African region were affected by anemia in 2019.³ Awareness about anemia and its consequences for women's and children's health and development has increased in recent decades⁴.in 2012 the 65th world health assembly approved an action plan and global target for maternal, infant, and children nutrition, with a commitment to halve anemia universality in women of reproductive age by 2025[3]. These estimates were prepared following the statistical approach used for the estimates published in the global universality of anemia in 2011⁵. actually, we will talk about [red sorrel], and [hibiscus sabdariffa] a current study says it is one of the biggest discoveries to

treat anemia herbily with minor side effects. A limited number of reviews on hibiscus sabdariffa have been conducted. Only some details review the phytochemical, pharmacological, and toxicological properties of hibiscus sabdariffa.



Fig 1. collection of habiscus.S



Figure 2. plucking the flower of habiscus sabadriffa



Figure 3 habiscus sabdariifa.



Figure 4. leaves are separate out from the plant hibiscus sabdariffa.

Hibiscus sabdariffa is a medicinal as well as an ornamental plant belonging to the family malvaceous. the chemical components are anthocyanins and polyphenols, protocatechuic acid, and quercetin. The plant is also known for its beta carotene, vitamin c, protein, and total sugar. The plant can be found in warm countries such as India, Saudi Arabia, Malaysia, Indonesia, Thailand, Philippines, Egypt, Mexico Etc. Hibiscus sabdariffa has been used traditionally as food, in herbal drinks, in cold and hot beverages, or as a flouring agent in the food industry and pharmaceutical industries, in vivo and invitro studies as well as clinical trials provide more indicates mostly for phytochemically poorly characterized Hibiscus sabdariffa extract. ^[1]in the Indian language it is known as Ggongura,lal ambari,lal Mista, Kharar, Patwa, yerra gorge, and chunkier, etc.³the plant is about 3.5 m tall and has a deep penetrating taproot. It has a smooth or nearly smooth, typically dark cylindrical shape having red and green stems. The Patels have some protective mechanism against microbial attack in most of the plat. The rosa-sinensis flower petals of large a number of plant species growing in the vicinity of our environment were screened for their antimicrobial activity.[32].

Material and method

Collection of samples.

The flowers were separated from the plant and washed with distilled water and dried, homogenized into a fine powder, and kept in air-tight bottles.



Figure 2.flower part of the hibiscus sabdariffa.

Extraction of aqueous components

1. Cold extraction, about 10 g of the dried flower was soaked in 50ml of cold water in a conical flask for 24 h and then filtered off using sterile Whatman no.1

A) Filter into a sterile conical flask and evaporated by using solvent distillation apparatus.

B) The extract was got with the help of muslin cloth and centrifuged at 10000 rpm. For 5 min.

c) The supernatant was obtained and stored at 4c for further use.[33]

2. Hot extraction, a total of 10of dried flower was soaked in 50ml of warm water which was the boiled for 30min. D). kept for 24 h undistributed and then filtered through sterile filter paper, evaporated by using solvent distilled apparatus.

e) The extract was taken with the help of muslin cloth.

F) centrifuged at 10000 rpm. For 5 min. and the supernatant was kept at 4 c for further use. [34].

Phytochemicals and potential of hibiscus sabdariffa.

There are many plants that used for the prevention and treatment of anemia. Hibiscus sabdariffa, acetosella, jatropa gossipiifolia, are commonly used. H. sabdariffa and acetosella belong to malvaceous. The red flowers, leaves of h. sabdariffa are the most used for the treatment of anemia. While the whole plant of acetosella is used but its red leaves and flowers are the most used. The leaves of flowers of these plants are steeped or soaked in hot or cold water. These contains all compound which is helping in blood formation. Like, iron, calcium, phosphorous, magnesium, copper, zinc, sulfur, sodium, and potassium. Also, sme vitamins, niacin, riboflavin, ascorbic acid, vit. b1etc. [6,9,15,8]

Medical and herbal application.

The methanol extracts prepared from the leaves of the H.S. were shown to have antimicrobial activities against pseudomonas aeruginosa, Escherichia coli, Enterobacter aerogenes, and streptococcus pyrogens. Using the well diffusion method and after an incubation period of 24 h at 37c, [the maximum observed zone of inhibition was 13+ [-] 00mm and it was against E coli, followed by 12+[-]00mm against both s. aureus and E. aerogenes at 80ug/ml concentration of leaves methanolic extract[35]. These microorganisms were obtained from infected skin, and the chemical compounds responsible for the antimicrobial activity may be flavonoids tannins, terpenoids, and alkaloids identified in the study.[27].

Herbal roselle can used in the treatment of cracks in the feet, sore and wounds, roselle has ability to increase urination.[47]

Anticancer activity

Oral cancer cell lines kb [ATCC CCL-17] were treated with 75ug and 125 ug of H.rosa sanseis oil extract for 24 after subjecting the treated cell to DNA fragmentation assay, and using agarose gel electrophoresis, it was observed the cell, DNA from both concentration has been fragmented compared to control sample. This means that hibiscus extract hindered the growth and proliferation of oral cancer cell [36].it was also shown that 250ug og 90% methanolic leaves extract inhibited HT-29 colorectal AGS cell lines by 100%. The cell viability IC50 was found to be 90.79ug/ml.

The phytochemical analysis suggested that this significant anticancer activity was mostly due to flavonoids and terpenoids content in the leaves [37].

Acetone extract of H.rosa sinensis flowers effect on Hela cell lines viability was investigated . using MTT assay, it was found that at a concentration of 1000ug/ml resulted in only 12.96% cell viability. The presence of flavonoids, tannins, and saponin detected by FT-IR spectroscopy and qualitative screening tests are suspected for this activity [38].

Methanolic leaf extracts exhibited a higher activity against k-562 leukemic cancer cell giving an IC50 value of 30+[-] 1.1 ug/than petroleum ether [IC50+[-]0.91ug/ml]and ethyl acetate extracts[IC50+[-]0.61ug/ml].

After 72 h of incubation using MTS and MTT Assays [46]. However, methanolic stem extracts resulted in an IC50 of 79.80ug/ml compared to IC50>100ug/ml from the petroleum ether and ethyl acetate extracts.

In this review, MDBK[Mardin-Darby kidney] cells were used as a positive control and gave an IC50>100ug/ml for all the extracts.

Morphological detection with Hoechst staining confirmed further for the anticancer activity as if exposed that treated k562 cells with 30ug/ml of methanol leaf extract, caused apoptosis with nuclear segmentation after h of incubation.[39]

Hair growth activity

The petroleum ether leaf extract of hibiscus rosa sanseis was proven to be a good hair growth promoter in a study involving Wistar albino rats.

After 14 days, the 5% w/w extract ointment resulted in 4.91 ± 0.261 mm hair length compared to 6.06 ± 0.431 mm in 2% minoxidil treated group, and 2.21 to 0.108 mm in negative control group [40]. The extract also contributed to 1937 to 37.84 hairs per cm area. The alopecia was induced by exposure to sonic stress, and there were no side effects such as erythema or edema, compared to synthetic hair growth promoting ointment [40]. Similarly, 5% hydroalcoholic leaves extract ointment exhibited 5.97 ± 0.13 mm hair length, and 2058 \pm 19.23 hair per cm area [41].

The effect of leaves petroleum ether extract was also investigated in male albino rats, the 1% extract resulted in 65%, catagen and telogen [33%] in hair follicle population compared to anagen 64% catagen 1%, in minoxidil treated group [44]. Phytosterols and terpenoids found in the extract are advantageous for hair growth while tannins, which are absent, suppress hair growth [41]. Leaf ethanolic extract contributed to 17-1.2 mm hair length, compared to 19.36 to 0.4 mm with minoxidil after 30 days. Although flower extract showed poorer results, this difference was insignificant [41,39,40].

The hair growth potential of H.S aqueous flower extract was evaluated. In vitro and in vivo. After 30 days, 2% of extract resulted in a mean of 18.68 ± 0.3 mm of hair length, compared to 19.24 to 0.4 mm with 2% of minoxidil in Wistar rats. Increase in hair follicular length was observed in vitro as 1.73 ± 0.18 mm, in comparison to 1.95 ± 0.14 mm by positive control, after 72 h of incubation [43].

Antihyperlipidemic activity

By oral route the flowers ethanolic extract of H.S at 500 mg/kg b.w dosage were evaluated using 400 mg/kg Triton and atherogenic diets induced hyperlipidemia in albino rats. After 48 h, the extract has managed to lower serum lipid levels to 79.5 ± 1.652 total cholesterol, 80 ± 2.287 triglycerides, 87.16 ± 2.543 phospholipids, 68.16 ± 2.1 LDL, 19.33 ± 1.4 mg/dl VLDL & increased HDL level to 35 ± 2.3 mg/ml simvastatin positive control value significantly [44].

Toxicity

The Sprague Dawley male rat were subjected to 14 days oral administration of ethanol flower and leaf extracts of H.rosa sanseis up to dosage of 500 mg/kg. The histological studies showed that regardless the extract type of the flower. Toxicity effects could have led to hepatic injury [45].

In Balb/c mice bone marrow blood cell, treatment with 400 mg/kg of methanolic flower extract showed similar micronuclei frequency to negative control group suggesting to genotoxicity [46]. In cyclophosphamide [20 mg/kg] induced DNA damage, using the same dosage reduced the numbers micronucleate polychromatic erythrocyte by 67.80%. However, 1600 mg/kg dose resulted in 20% mortality [46].

Conclusion.

Hibiscus sabdariffa is an ornamental plant which has a vital role in our daily life. In this article we can see multiple uses of Hibiscus sabdariffa. I know it is quite hard to perform pharmacological activity on animals that's not right but in my opinion, activities can be performed on software which are available because of this will reduce the loss of animals. Hibiscus sabdariffa is easy to find and easy to use in our daily routine. Diseases like anemia, hyperlipidemia, cancer, diabetes, hypertension are chronic disorders which take time to heal. Hibiscus sabdariffa can be used as daily herbal tea. Which maintains hypertension. Future studies on Hibiscus sabdariffa can easily clear that how it can be helpful more than this.

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