REVIEW ARTICLE

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Trichosanthes dioica (Roxb.): A Review on Pharmacological Update

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Abstracts: Around the world, the use of medicinal plants for ailments had been in use for centuries. The advantage over other allopathic drugs, in terms of lower side effects, and more effective, provided enough motivation to carryout research for finding out potential medicinal activity for different ailments. One such plant of the genus Trichosanthes has been selected for the present review, it has found to be an native of Southern and Eastern Asia, Australia and islands of the western pacific popularly known as the pointed gourd, parval/parwal (Hindi), or potol (Assamese, Oriya or Bengali) and "Paror" in Marathi. It is grown widely in India, mainly in eastern parts namely, Orissa, Bengal, Assam, Bihar, and Uttar Pradesh. It is used as ingredients of soup, stew, curry, sweet or eaten with meat stuffing. *Trichosanthes dioica* (Roxb.) is dioecious, climber with perennial root stock. Brief description of *T. dioica* (Roxb.) is found in the Charaka samhita, Sushruta samhita. It has wide variety of medicinal actions, benefit for the pharmaceutical industry as a whole. It is good source of Carbohydrates, Vitamin A, and Vitamin C. During a period of few decades, many pharmacological activities in *T. dioica* (Roxb.), had been, explored. These researches highlighted the significance of the current plant, as a potential and effective, Antimicrobial, Ameliorative, Antidiabetic, Cholesterol lowering, Antinociceptive, Wound healing agent etc. The present review is an effort to sum up, an up-to-date pharmacological activities explored in it, plus giving an insight to explore, it further for the unexplored areas.

INTRODUCTION

The worldwide role of plants in the cure of diseases is exemplified by their employment in all the major systems of medicine irrespective of the underlying philosophical premise. For an instance, Western medicines with origins in Mesopotamia and Egypt; the Unani (Islamic) and Ayurvedic (Hindu) systems are centered in western Asia and the Indian subcontinent. All the references of historical use of plants were mentioned in *Materia Medica*. [1]

A complete understanding of medicinal plants involves a number of disciplines including commerce, botany, horticulture, chemistry enzymology, genetics, quality control and pharmacology. [1] The relatively lower incidence of adverse reactions of plant preparations compared to the modern conventional pharmaceuticals, coupled with reduced cost, is encouraging to consider plant medicines as alternative to synthetic drugs. [2-3]

India has a rich flora of Herbal medicines that have been the basis of treatment and cure for various diseases and physiological conditions, practiced widely in Ayurveda, Unani and Siddha systems. Several plant species are used by many ethnic groups for the treatment of various ailments ranging from minor infections to dysentery, skin diseases, asthma, malaria and a horde of other indications. [4-6]

The Indian subcontinent represents one of the richest diverse genetic resources. Of the estimated 250,000 species of flowering plants at global level, about 3000 are regarded as food source; out of which only 200 species have been domesticated. Global diversity in vegetable crops is estimated to be about 400 species of which about 80 species of major and minor vegetables are reported to have originated in India. [6-7]

TRICHOSANTHES DIOICA (Roxb.)

Trichosanthes, family Cucurbitaceae, has approximately 80 species World over, of which 40 are distributed in China, 20 being used in traditional Chinese Medicines. [8]

Over 20 species have been recorded in India of which two namely *T. anguina & T. dioica* are cultivated as vegetable. Other important species found in the world are *T. palmata, T. cordata, T. nervifolia, T. cucumerina, T. wallichiana, T. cuspida, T.incisa, T. laciniosa, T. kirilowii* etc. [9]

T. dioica Roxb. (Cucurbitaceae), called pointed gourd in English, *Potol* in Bengali and *Patola* in Sanskrit, is a dioecious climber found wild throughout the plains of North and North-East India from Punjab to Assam and Tripura states of India. It is also grown and commercially cultivated in other asian countries like, Bangladesh, Pakistan & Sri Lanka. In India, all parts of this plant had been traditionally used in various ailments. According to Ayurveda, roots of *T.dioica* have strong purgative property, also it has been used as purgative and as tonic, febriguge, in treatment of jaundice, ansarca and ascites. [10-11]

Trichosanthes Dioica (Roxb.) in Traditional Medicine

Pointed gourd, *T. dioica (*Roxb.) is one of the most nutritive cucurbit vegetables, and it holds a coveted position in the Indian market during the summer and rainy seasons. It is a perennial crop, highly accepted due to its availability for eight months in a year (February–September). Being very rich in protein and vitamin A, it has certain medicinal properties, and many reports are available regarding its role in lowering of blood sugar and serum triglycerides. [12] The fruits are easily digestible and diuretic in nature. They are also known to have anti-ulcerous effects. [13] It is prescribed to improve appetite and digestion. [14] The decoction of TD is useful as a valuable alternative tonic, and as a febrifuge, which is given for boils and other skin diseases. [15] The juice of the leaf is applied as patches for alopecia areata. [16] The root are used as hydragogue cathartic tonic and as a febrifuge. [17] The fruits are used as a remedy for spermatorrhoea, and the juice of unripe fruits and also tender shoots, are used for cooling and as a laxative. The fruits and seeds have some prospects in the

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Table 1: Percentage Values of Physical Parameters in the Plant Leaves

Physical Parameters	Values Obtained (% w/w) [27]
Total Ash	8.5 %
Acid insoluble ash	2.0 %
Water soluble ash	3.0 %
Sulphated ash	5.5 %
Foreign matter	0.5 %
Loss on drying	0.25%

Table 2: Potency of *Trichosanthes Dioica* Extract Against Different Microorganisms

Extent of Antimicrobial Activity of Trichosanthes dioica Against Certain Pathogens	
Leaves Extract	*M. smegmatis >S. aureus > E. coli >K. pneumonia & P. aeruginosa*
Fruit Extract	*S. aureus > K. pneumonia > E. coli, P. aeruginosa & M. smegmatis* (Nil)
Seeds Extract	*S. aureus > E. coli > K. pneumonia, P. aeruginosa & M. smegmatis* (Nil)
Streptomycin	*E. coli & P. aeruginosa > S. aureus > K. pneumonia & M. smegmatis* (Nil)

control of some cancer-like conditions and haemagglutinating activities. [18] It has been shown to be effective in Amlapitta. [19-20]

Morphology of the Plant

The plant is a perennial, dioecious, and grows as a vine. Vines are pencil thick in size with dark green cordate, ovate, oblong, not lobed, rigid, leaves. Roots are tuberous with long tap root system. Flowers are tubular white. Stigma remains viable for approximately 14 hours and 40–70% of flowers set fruit. Based on shape, size and striation, fruits can be grouped into 4 categories:

- Long, dark green with white stripes, 10–13 cm long
- Thick, dark green with very pale green stripes, 10–16 cm long
- Roundish, dark green with white stripe, 5–8 cm long
- Tapering, green and striped, 5–8 cm long. [21]

Leaves of the plant are considered to be rich source of bioactive compounds with many medicinal properties such as blood sugar lowering effect in experimental rat models. [22-23]

(*Chandra et al., 1988*) studied the macroscopic characteristics in the Male leaves of plant. He found out the following characteristics. [22]

- Leaves : Simple, Alternate
- Shape : Ovate, Oblong, Cordate
- Size : 5-8 cm long, 3-6 cm broad
- Texture : Scarbrous
- Apex : Acute to acuminate
- Margin : Sinuate to dentate
- Base : Cordate
- Surface : Both surfaces are very rough with rigid hairs
- Color : Green and Dull Green
- Venation : Similar
- Taste : Slightly bitter
- Odor : Not specific
- Petiole : Similar

Cultivation

The pointed gourd is usually propagated through vine cuttings and root suckers. Seeds are not used in planting because of poor germination and inability to determine the sex of plants before flowering. As a result, crop established from seed may contain 50% non-fruiting male plants. Both pre-rooted and fresh vine cuttings are used for propagation. Vine cuttings made in the fall of the previous year and rooted during winter. Fresh vines used for field planting should have 8–10 nodes per cutting. The distance between plants is kept between 1.5–2.0 m × 1.5–2.0 m. A female: male ratio of 9:1 is optimum for ensuring the maximum fruit set. [24]

Chemical Constituents

Earlier chemical study reveals that in addition to a number of tetra & pentacyclic triterpenes, the toxic bitter principles cucurbitacins (a group of often highly oxygenated tetracyclic compounds with a unique carbon skeleton *& almost a carbonyl group in ring C) may be considered as a taxonomic character of Cucurbitaceae.* [25-26]

Physicochemical Parameter Investigation

During Physicochemical investigation, following phytoconstituents were found to be present and absent, in different solvent extracts. Alcoholic extract showed the presence of Alkaloids, carbohydrates, flavonoids and proteins; Methanolic extract showed the presence of Alkaloids, Carbohydrates, flavonoids, glycosides, and tannins. Glycosides and steroids were present in Chloroform extract; and only steroids were detectable in the petroleum ether extract of the plant. [27]

PHARMACOLOGICAL ACTIVITY – AN UPDATE

Ameliorative Effect

(*Bhattacharya et al., 2012*) studied an ameliorative activity in the roots of the plant collected from Majdia village, in Nadia district, West Bengal. Upon standardization of plant, he found reducting sugars, amino acids, triterpenoids, and steroids as main constituents. He found upon experimentation, that the plant extract, with the doses of 5 mg to 10 mg, in the arsenic treatment models of rats, had significant reduction in intoxication, leading to restoration of the altered body weights, organ weights, haematological and serum parameters towards normal, affected due to arsenic toxicity. Body weight is regarded as a nonspecific indicator of general wellbeing of animals. Reduction in body weight is an indicator of decline in general health

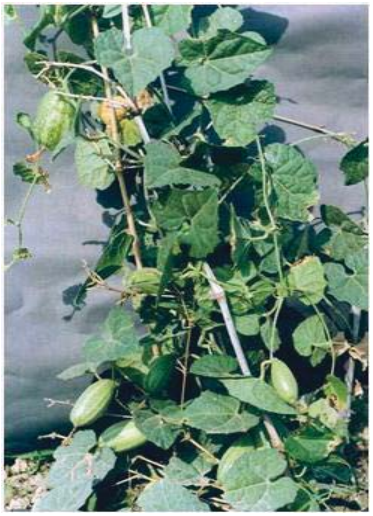

Figure 1: *Trichosanthes dioica* (Roxb.) leaves

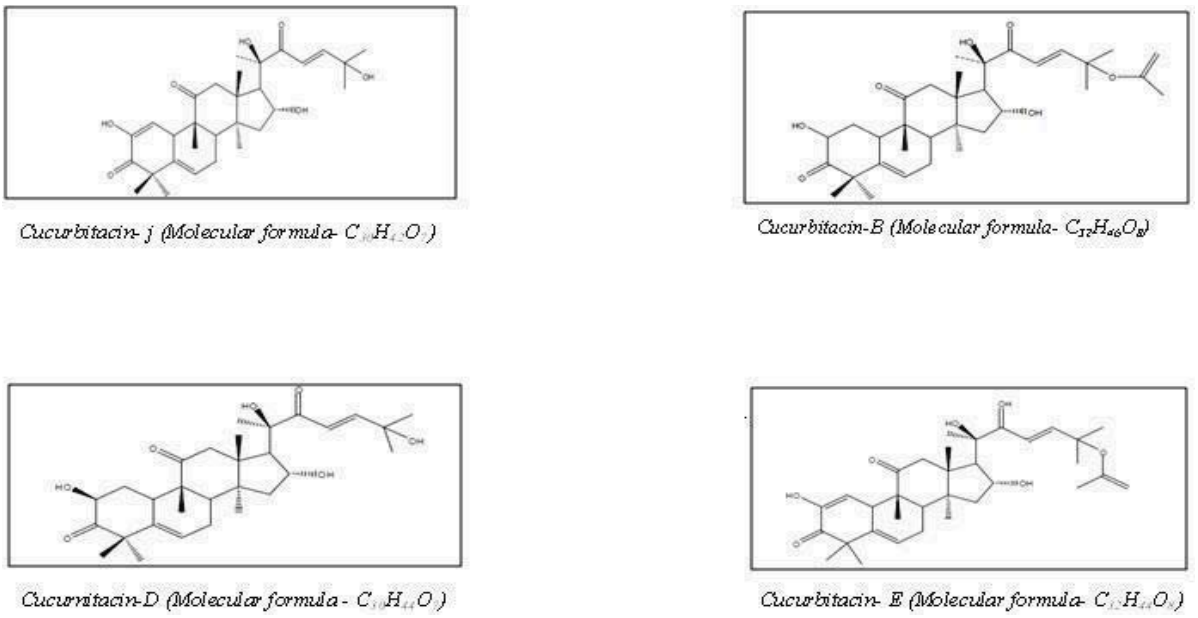

Figure 2: Main chemical constituents in *Trichosanthes dioca* (Roxb.)

condition of arsenic induced experimental rats. Arsenic intoxication resulted in depletion in haemoglobin and RBC and on the other hand proliferation of WBC, indicating its toxicity towards the blood and haematopoeitic system. WBC is regarded as one of the important sources of ROS generation. Study indicated that TDA pretreatment dose dependently and significantly brought the reduced ALAD activity and haemoglobin content back towards normal, raised the erythrocyte count and reduced the leaucocyte count significantly as compared with those of toxin control rats. These indicating parameters revealed that TDA exerted less toxic effect to the blood and haematopoietic system and thus could maintain the normal haematological profile in arsenic induced rats. [28]

Antidiabetic Effect

(*Rai et al., 2008*) studied the antidiabetic effect in the water extracts of *T.dioica*. Effect of aqueous extract of *T. dioica* on FBG, PPG, AST, ALT, ALP, and CREA of severely diabetic rats was studied. It is known that in uncontrolled diabetes mellitus, there are functional changes in many tissues / organs like pancreas, liver, heart, adipose etc., which are reflected as alterations in some of the metabolic pathways and many blood parameters. In the present study, in the untreated diabetic animals, there was an increase in AST which indicates the effect on the heart, metabolism and also ALT, ALP, CREA indicative of the effect on liver metabolism. However, the animals treated with the extract showed a significant reduction of 28.7 % in FBG and 30.7 % in PPG levels. Moreover, the dose produced a fall of 22.6, 36.5, 34.2, and 35.3 % respectively in AST, ALT, ALP, and CREA levels after 28 days treatment. At the end of treatment there was a slight increment observed in the diabetic control group. This point out that treatment with the extract affected the metabolic pathways in such a way that liver, heart and other tissues are showed the tendency to return to normal metabolic pathways. [29]

(*Chakravaty et al., 2011*) seconded the antidiabetic effect in rats with streptozotocin induced severe diabetes mellitus, aqueous extract of *T.dioica* fruits at a dose of

1000mg/kg body weight daily once for 28 days reduced the levels of fasting blood glucose, postprandial glucose, aspartate amino transferase, alanine amino transferase, alkaline phosphatase, creatinine, urine sugar and urine protein where as total protein and body weight was increased. No toxic effect was observed during LD50. The study suggests that further detailed toxicity studies and mechanism of action of *T.dioica* would be useful for undertaking human trials. [29-30]

Anti-oxidant, Anti-inflammatory and Anti-pyretic Effect of Trichosanthes Dioica

(*Gulcin et al.,2002*) studied antioxidant activity of melatonin and found reactive oxygen species of various forms and found free radicals such as superoxide anion radicals (O_2^-) and hydroxyl radicals (OH^*), as well as non free radicals species (H_2O_2) and the singled oxygen($^1O_2$). [31] In a study carried out by (*Gulcin et al., 2011*), it was found that excessive generation of ROS got induced by various stimuli can easily initiate the peroxidation of the membrane lipids, leading to the accumulation of lipid peroxidation. The peroxidation products and their secondary oxidation products such as Malondialdehyde (MDA) and 4 –hydroxinonenal can react with biological substrates such as proteins, amines and deoxyribonucleic acids, [32] leading to variety of pathophysiological processes such as inflammation, diabetes, genotoxicity and cancer.

(*Alam et al., 2011*) upon studying the antioxidant activity in fruits of Trichosanthes dioica, followed the phosphomolybednum method according to procedure of (*Prieto et al.,1999*). The assay is based on the reduction of Mo (VI) –Mo(V) by the extract and subsequent formation of a green phosphate/Mo(V) complex at acid pH. The ethanolic extracts of Trichosanthes dioica, showed significant antioxidant, DPPH radical scavenging activity and Nitric oxide scavenging activity. *T. dioica* ethanolic extract showed significant anti-inflammatory and antipyretic activity. Thus showing its significance in multiutility during disease complications, like inappropriate fever development during treatment of infections. [33]

Moreover (*Bhandari et al., 2010*) found the plant polyphenols, a diverse group of phenolic compounds (flavanols, flavanoids,tannic acid,anthocyanins,phenolic acid, etc.) posses ideal structural chemistry for free radical scavenging activity, [34] and exhibit wide range of physiological properties, such as, anti-allergic, anti-atherogenic, anti-inflammatory, anti-microbial, anti-thromotic, cardioprotective and vasodialatory effects. [35]

The beneficial effects derived from phenolic compounds have been attributed to their antioxidant activity (*Manach et al., 2005*). [36] Flavanoids are important in the modulation of γ–glutamylcysteine synthase in both cellular defenses and detoxification of xenobiotics. [37] Phytochemical analysis showed that the extract contained alkaloids, glycosides, phenolic compounds, tannins, steroids and flavanoids. Flavanoids, tannins, phenolic compounds, and glycosides have all been associated with various degrees of anti-inflammatory, antipyretic, and antioxidant activities. [38-41]

Antidiarrhoeal Activity

(*Uddin et al., 2005*) studied Antidiarrheal activity of the extracts was tested in castor oil-induced diarrhoea in mice according to the method described by Shoba and Thomas. In castor oil-induced diarrhoea, all the four extracts of *T. dioica* at doses of 200 mg/kg and 400 mg/kg reduced the total number of faeces in a dose dependent manner. The inhibition of characteristic diarrhoeal droppings was also recorded at both doses in magnesium sulphate-induced diarrhoea. The extracts were found to reduce the total number of faeces significantly when compared to control. Methanol extract at 400 mg/kg dose showed the highest inhibition of diarrhoeal droppings in both model. The antidiarrhoeal activity was evident from the reduction of total number of wet faeces in the test groups in the experiment. Magnesium sulphate has been reported to induce diarrhoea by increasing the volume of intestinal content through prevention of reabsorption of water. [42-48]

(*Akter et al., 2011*) found ethyl acetate, methanol and water extracts of *T. dioica* showing a significant antidiarrhoeal activity against castor oil-induced and magnesium sulphate-induced diarrhoea in experimental animals. The methanol extract showed almost similar activity as Loperamide, when tested at 200 and 400 mg/kg doses and statistically significant reduction in the frequency of defecation when compared to control mice. The ethyl acetate, methanol and water extracts were also found to alleviate the diarrhoeic condition. It is possible that the antisecretory and antioxidant properties of different phytoconstituents may contribute to the observed antidiarrhoeal effect. The antidiarrhoeal activity of flavonoids has been ascribed to their ability to inhibit intestinal motility and hydro-electrolytic secretion, which are known to be altered in this intestinal condition. [49] In addition, flavonoids present antioxidant properties which are presumed to be responsible for the inhibitory effects exerted upon several enzymes including those involved in the arachidonic acid metabolism. [50]

Antimicrobial Activity

(*Rai et al., 2010*) studied the leaves, fruits and seeds extract of the *T.dioica* for their antimicrobial activities and an interesting antimicrobial profile had been observed against *Staphylococcus aureus, Klebsiella pneumonia, Escherichia coli, Pseudomonas aeruginosa* and *Mycobacterium smegmatis* bacterias at a concentration of 25, 50 and 75 mg/ml of each extract. Extent of effects of each extract was assessed by measuring diameter of inhibition zone (DIZ). The results were compared with the standard antibiotic streptomycin of 1mg/ml concentration. All the three different concentrations (25, 50, 75 mg/ml) showed sustained activity against all five bacteria's tested, though the highest activity observed was against *Mycobacterium smegmatis* having DIZ 24, 28 and 30 mm at concentrations of 25, 50 and 75 mg/ml respectively. However, standard drug streptomycin did not show any activity against

Mycobacterium smegmatis bacteria. Activity was quite reasonable and concentration dependent in *Staphylococcus aureus* bacteria having 14, 16 and 22 DIZ at concentrations of 25, 50 and 75 mg/ml respectively. The lowest activity was shown against streptomycin of 10 mm DIZ. [51]

The data also reveals that the leaves and seeds extract showed identical patterns of zone of inhibition of *Escherichia coli* bacteria whereas; their patterns of inhibition against *Mycobacterium smegmatis* were just opposite. Hence the results suggest that *Trichosanthes dioica* plant is very promising plant not only for its antidiabetic and antioxidant potential but also for its antimicrobial potential with special reference of anti-infective and anti-tuberculosis. Though, the extent of antibacterial activity of *Trichosanthes dioica* extract was of the following order: leaves> fruits> seeds. Therefore, the most important finding is that its fruits and to some extent its seeds can be used as anti-infective whereas its leaves could be used for anti- tuberculosis treatment. [51]

Cholesterol Lowering Activity

(*Sharmila et al., 1997*) found cholesterol lowering potential in the aqueous fruit extracts of *T.dioica*, The underlying mechanism of the lipidaemic lowering activity of TD could be the inhibition of lipid absorption due to the presence of saponins and tanins in the aqueous extract, [52] and/or inhibition of cholesterolesterase, activation of fatty acids synthase, acetyl-CoA carboxylase and production of triglyceride precursors such as acetyl-CoA and glycerol phosphate. The main constituents of TD are flavonoids, saponins and tannins. [53] Flavonoids are considered as active constituents of many medicinal plants and natural products with positive effect for human health. The effect of some flavonoids on cholesterol metabolism had been explored. [54-56] It seems then that the TD fruit extract reduced plasma cholesterol and triglyceride levels without stimulating insulin secretion. The TD aqueous fruit extract causes a weight loss in rats. This effect could be explained directly by the lipid-lowering activity of the extract, and/or its influence of rat appetite or indirectly by influencing various lipidaemic regulation systems. [57-60]

Hypoglycemic Activity

(*Shalina et al., 2010*) found hypoglycaemic potential in *T.dioica,* the study has detected the antidiabetic activity of aqueous extract of *T.dioica* in Streptozotocin induced diabetes rats. The aqueous extract of *T.dioica* has been valuable in the treatment of diabetis mellitus as it lowers serum glucose levels and significantly increases body weight of diabetic rats. [61]

Antinociceptive and Locomotor Activity

(*Bhattacharya et al., 2012*) explored the anti-nociceptive activity of *T. dioica* root extracts by both acetic acid induced writhing method and tail flick method in mice to assess peripheral (non-narcotic) and central (narcotic) type of activities respectively. [62] The nociceptive actions by DCTD was found to be the most potent. The METD although found less active, exhibited significant peripheral anti-nociceptive actions. The results of tail flick test clearly indicated that the DCTD had significant central (narcotic) anti-nociceptive action that was absent in the METD; but the extent of central analgesic effect was much lower than that of reference morphine sulfate. This means that the DCM extract of *T. dioica* root exerted anti-nociceptive activity involving both peripheral and central mechanisms revealing the involvement of the central nervous system in anti-nociception, whereas the MeOH extract inhibited only the peripheral pain mechanisms in mice. This means that the DCTD exerted anti-nociceptive activity interfering both peripheral and central mechanisms for the transmission of painful messages in mice. Most of the centrally acting analgesics have certain central nervous system depressant effects. The locomotor activity was evaluated to assess the central nervous system (CNS) depressant property of extracts on the motor activity in mice. Most of the centrally active analgesic agents influence the locomotor activities mainly by reducing the motor activity. Locomotor activity is considered as an index of alertness and a decrease may to sedation as a result of reduced excitability of the CNS. DCTD significantly decreased locomotor activity in a dose dependent fashion and hence indicating its CNS depressant property in mice. [63-65]

Wound Healing Activity

(*Rane et al., 2003*) and (*Shivhare et al., 2010*) studied wound healing potential in the fruit extracts of *T.dioica*. The following formula was used for calculating the wound healing potential as

$$\% \text{ wound contraction} = \frac{\text{Initial Wound Size} - \text{Specific Day Wound Size}}{\text{Initial wound size}} \times 100$$

During the experiment, a better healing pattern with complete wound closure was observed in standard and treated group within 10 and 14 days respectively while it was about 22 days in control rats.

Wound healing is stepwise process, which consists of different phases such as hemostasis, inflammation, proliferative and remodeling or maturation. The genetic response regulating the body's own cellular resistance mechanisms contributes to the wound and its repair.

In excision wound, the methanolic extract showed faster healing with earlier wound contraction compared with control groups. The methanolic extract of TDR increased cellular proliferation and collagen synthesis at the wound site as evidenced by increase in total protein and total collagen contents reflected by hydroxyproline content of granulation tissues. The glycosaminoglycans are a major component of the extra cellular matrix of skin, joints, eyes and many other tissues and organs. In spite of its simple structure, it demonstrates remarkable visco-elastic and hygroscopic properties which are relevant for dermal tissue function. Biological activities in skin are due to its interaction with various binding proteins. Due to an influence on signaling pathways, hyaluronic acid and hydroxyproline is involved in the wound-healing process and scarless fetal healing. In clinical trials, topical application of hyaluronic acid has improved the healing of

wound. In addition, the muco-polysaccharide hyaluronic acid protects granulation tissue from oxygen free radical damage and thereby stimulates wound healing. Among the glycosaminoglycans, hydroxyproline, dermatan sulfate and dermatan have also been implicated in wound repair and fibrosis. Their ability to bind and alter protein–protein interactions has identified them as important determinants of cellular responsiveness in development, homeostasis & disease. The results showed that methanolic extract ointment possesses a distinct prohealing stroke. This was demonstrated by a significant increase in the rate of wound contraction and by enhanced epithelialization period. Significant increase in tensile strength, & hydroxyproline content were observed, which was auxiliary supported by histopathological studies. This indicated newly formed fibroblasts cells, collagen fibres and blood vessels. Recent studies with other plant extracts have shown that phytochemical constituents like flavanoids, triterpenoids and tannins are known to promote the wound-healing process. [66-67]

Anti-worm Activity

(*Bhattacharya et al., 2010*) studied antiworm potential in all the extracts and demonstrated concentration-dependent paralytic and lethal effects on P. posthuma and lethal effects on A. galli. The DCTD was found to be the most potent followed by the METD and AQTD. A. galli was found to be more sensitive than P. posthuma against all extracts, indicating *T. dioica* root as an effective nematocide.

The study thus showed promising antiwormicidal activity in *Trichosanthes dioica* against experimental worms, showing promising nematocidal and hence anthelmentic potential. [68]

Laxative Action

(*Bhattacharya et al., 2011*) studied laxative action in *T. dioica* Roxb. (Cucurbitaceae) in Swiss albino mice. The laxative activity of TDA (100 and 200 mg kg (-1) body weight per os) was evaluated by assessing the excretory bowel activities in naive (non-constipated) and in drug (loperamide)-induced constipation in mice. Further, the gastrointestinal transit was measured in both naive and in constipated mice. Castor oil (0.5 mL/mouse per os) was used as the reference. TDA significantly and dose-dependently increased all the excretory bowel activities and gastrointestinal transit in both naive and constipated mice. TDA at 200 mg kg (-1) body weight was found to be the most active, causing diarrhoea in mice. Thus, T. dioica root demonstrated stimulant laxative activity in Swiss mice, validating its traditional usage in India. [69]

CONCLUSION

It could be concluded that, there is an increase in experimental activities on medicinal plants, to find cure for the diseases with a goal to provide treatment without compromising with the side effects of the drugs, as is seen in most of the allopathic drugs. Moreover, ancient system of medicine which had seen continuous decline due to rapid acceptance of allopathic drugs seems to take a new turn, with ancient medicines taking new avatar, with same effects to reach the grass roots and achieve a significant breakthrough in the treatment of ailments bestowed on the mankind. The scientific experiments proving the medicinal potential is just confirming the reasoning of the traditions followed by our forefathers. Earlier, when allopathic system was no present, people used to rely on the house hold medicines, for their ailments.

Within short span of time, experiments confirmed Ameliorative activity, Antidiabetic activity, Antioxidant, Anti-inflammatory and Antipyretic activity, Antidiarrhoeal Activity, Antimicrobial activity, Cholesterol lowering activity,Hypoglyceamic activity, Anti-nociceptive and Antilocomotive activity, Wound healing activity, Laxative action, Anti-worm activity.

The experimental proves, thus, signifies, the wide therapeutic areas, Trichosanthes dioica, covers by its medicinal properties, emphasizing its importance to the pharmaceutical industry as potential multi-drug source at lower cost and side effects. More promising results would just confirm the importance of *Trichosanthes dioica* as a Drug, for the ailments part of other therapeutic areas, like pain, analgesic etc.

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