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A REVIEW ON STUDIES OF ETHNOBOTANICAL PERSPECTIVES, PHYTOCHEMISTRY AND PHARMACOLOGICAL SIGNIFICANCE OF BARLERIA PRIONITIS LINN.: "A SPECIFIED MEDICINAL PLANT"

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Abstract:

"Vajradanti" orporcupine flower is the common name of *Barleria prionitis* Linn. belonging to the family Acanthaceae. It is an indigenous plant in parts of Africa and South Asia. Ayurvedic and other traditional systems recognize the therapeutic use of its flower, root, stem, leaf, and in some cases the entire plant against a wide range of illnesses including fever, cough, jaundice, and severe pain. Recent pharmacognostical screening has demonstrated that this plant is a significant source of secondary metabolites, such as saponin, tannin, flavonoid, alkaloid, glycoside, and phenolic compounds, and that these compounds have potent antioxidant, anti-microbial, anti-inflammatory, hepatoprotective, gastro-protective, and other effects. It is still underused while having potential remedial value. Barlenoside, barlerine, acetylbarlerine, and balarenone are some of the particular compounds found in the plant as well as Lupeol, β-sitosterol, vanillic acid, and syringic acid are some of the more widely distributed secondary metabolites. This review serves as a bird's-eye overview of ethnomedicinal information, morphological data, Pharmacological activity, and phytochemistry of the *Barleria prionitis* Linn.

Key Words: *Barleria prionitis*Linn., Pharmacology, Ethnobotany, Phytochemistry.

Introduction:

All life on earth depends on plants, which are also an essential resource for human health as food, fuel, and natural medicine. A recent development in the study of and promotion of plant-based medicines has shifted more and more in favour of herbal remedies in the previous few decades.[1] Most of the globe has traditionally used plant-based remedies, and some studies are now focusing on how well they work against microbial disease. [2-3] Due to its inventive uses, plant-derived compounds have recently attracted a lot of attention. About 14–28% of higher plant species are utilised for medicinal purposes, and 74% of pharmacologically active phytochemical components were found after investigating ethnomedical plant use. Over the past two decades, fresh research has emerged.[4]The herbs with healing properties offer precise intends to the treatment of many internal aliens, which are typically thought to be difficult to cure, *prionitis* is a species of Genus *Barleria* from family Acanthaceae, is a persistent, robust medicinal plant. There are 300 species in the Acanthaceae family used in medicine and Ayurveda. [5]*Barleria prionitis* Linn. commonly known as Vajradanti or Porcupine flower, is a member of the Acanthaceae family. It is indigenous to India and is also widely dispersed throughout Asia, including in Malaysia, Pakistan, the Philippines, Yemen, Sri Lanka, and Eastern, Southern, and Central Africa. [5-6]It is a 1.5 m tall, single-stemmed, erect, perennial, prickly, and evergreen shrub that grows from a single taproot. lateral roots with several branches. The leaves are up to 100 mm long and 40 mm wide, and they have an oval shape with narrow ends. Three to five incisive, 10–20 mm long, light-coloured spines guard the leaf base. The tubular, yellow-orange blossoms have multiple long filaments that stick out. The bouquets of flowers are bundled. At the top of the plant, where there are the most flowers, there are also many flowers at the base of each leaf. The oval-shaped seed capsules have two very large, flat seeds that are protected by tangled hairs and a sharp beak. Stiff, smooth, and light brown to light grizzled in colour, the stem and branches.[7] There are about 34 species of the genus *Barleria* Linn., which belongs

to the Acanthaceae family. It has species like *B. prionitis,B. albostellete,B. greenii, B.micans,B. obtuse, B. popovii, B. aculeata, B. opaca, B. tomentosa, B. buxifolia, B. acuminata and B. strigosa, B. observatrix, B.acanthoides, B.acuminata,B.courtallica, B.cristata, B.cuspidata, B.gibsonii, B.grandiflora, B.hochstetteri, B.involucrata var. elata, B.involucrata var. involucrata, B.lavaniana, B.lawii, B.longiflora, B.lupulina, B.montana, B.mysorensis, B.nitida, B.noctiflora, B.pilosa, B.prattensis, B.repens. etc.*[5,8,9]

Fig.: 1 Habit of the Plant *Barleria prionitis* Linn.

Vernacular names of *Barleria prionitis* Linn.

English: Porcupine Flower, Yellow Hedge Barleria.
Gujarati: Kantashila.
Marathi: Pivala- koranta, Kalsunda, Koranta, Katekoranti.
Hindi: Kala bans, Kinti, Katsareya.
Kannada: Mullugorante, Karunta.
Malayalam: Varelmutti, Chemmuli.
Tamil: Semmulli. KaatuKanagaambara.
Bangali: Peetjhanti, Kantajint.
Telagu: MulligorintaChettu

In Ayurvedic traditional system of medicine it is called as sahachara, Vajradanti, kuranta, kurantaka, baanashairiya, koranda, pita saireyaka.[10-11]

Taxonomic Hierarchy[12]

Kingdom: Plantae
Subkingdom: Tracheobionta
Division: Magnoliophyta
Class: Magnoliopsida
Subclass: Asteridae
Order:Lamiales
Family: Acanthaceae
Genus: *Barleria*
Species: *prionitis* Linn.

Distribution:

The tropical region of India is home to the *B. prionitis* plant. The plant is frequently planted in gardens as a hedge plant. Geographically speaking, it can be located in the tropical climate zone of Asia, which includes Sri Lanka, Malaysia, India, Pakistan, as well as in Africa and Yemen. Assam, Andhra Pradesh, Jharkhand, Bihar, Diu and Daman, Chhattisgarh, Madhya Pradesh, Maharashtra, Tamilnadu, Karnataka,

Kerala, Uttarakhand, Utter Pradesh, Orissa, Rajasthan, West Bengal, Puducherry,Lakshadweep, and Maldiv Island are among the states in India where it is found.[5,10,11,13]

Ethnomedicinal use:

Herb is used to cure whooping cough, toothaches, and gum disease.[12]The leaf juice is used to treat fever and cataracts. In addition to being effective against respiratory illnesses including whooping cough and tuberculosis, the extract of a plant containing iridoid glycosides has been shown to have hepatoprotective properties. [14]The entire plant of *Barleriaprionitis* is used in ayurveda and therapeutic preparations, is used to treat a variety of ailments, including asthma, disease, fever, piles, ulcers, whooping cough, and regulation of wound healing. bleeding conditions, liver conditions, solidity of appendages expanding force, gout, oedema, jungle fever, toothache, joint pain, urinary contamination, leukoderma, scabies, jaundice, gastrointestinal clutters, hepatoprotective, snakebites, liver conditions, and neuralgia. Many efforts have been made by a few analysts to support the viability of plants in the context of natural and pharmaceutical treatments for illnesses.[15-18]Leaf juice is utilised for fever, ulcers, stomach disorders, and urinary infections. Honey and leaf juice are used to treat children's catarrh and fever. Leaf juice is also used to lacerate the soles of feet during the rainy season. For acne, mix leaf juice with coconut oil. Honey is mixed with whole plant ash to treat bronchial asthma. The plant bark has diaphoretic and expectorant properties. The tender leaves and flowers are diuretic in nature. Root paste is applied to boils and swollen glands. Oil extracted from a plant is said to be utilised in Indian ayurvedic medical system to stop grizzled hair growth. Internally, flowers are used to treat edoema, urethral discharges, internal abscesses, migraines, reduce obesity, and seminal disorders. The entire plant is used for a variety of ailments, including scrotum enlargement, limb stiffness, sciatica, jaundice, urinary affection, dropsy, rheumatic infection, nervine disease, dysuria, and hepatic blockage. [10]

Phytochemistry:

Preliminary phytochemical analysis of hydro methanolic extract of whole plant shows steroid, glycosides, saponins, flavonoids. Leaf, flowering apex shows the presence of potassium salts.

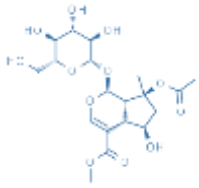
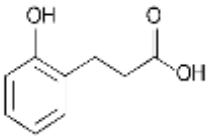
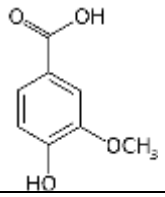
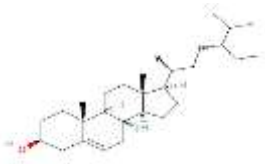
Various phytoconstituents such as, lupeol, balarenone, prioniside A, prioniside B, prioniside C, and balarenone. Glycosides like lupulinoside, acetylbarlerine, barlerinoside, verbascoside are present. Anthraquinones derivatives like 1,3,6,8-tertra methoxy- 2,7- dimethyl anthraquione and 1,8, di hydroxy-2,7-dimethyl 3,6- dimethoxyanthraquione are found. It also contains vanillic acid, 6-hydroxyflavones, syringic acid, p-hydroxybenzoic acid, melilotic acid, β-sitosterol, apigenin 7-O-glucoside, 13, 14-seco-stigmasta-5,14-diene-3-a-ol, luteoline 7-O-β-D glucoside.[19]

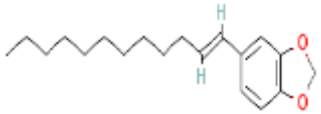
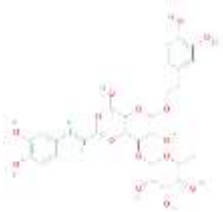
Table.: 1 *Barleria prionitis* Linn. Conventional uses[13]

Plant Part Used for Treatment	Name of Disorder	Mode of application
Root	Whooping cough	Formulation
	Jaundice	Unspecified
	Snakebite	Taking a decoction orally
	Rheumatic fever	Paste with goat milk is administered
	Fever	a powder is administered directly.
	Boils and glandular swellings	Paste is directly applied on this area
	Expel out spine	Root extract is applied locally on skin
Stem	Dropsy and liver congestion	powder mix with cow milk
Bark	Dropsy	extract of bark
Shoot	Asthma	Specific formulation
	Whooping cough	honey-flavoured tablets
Leaf	Catarrhal affections ofchildren	Leaf juice
	Fever	decoction of leaf with honey 7 days.
	Pus in ears	Leaves extract
	stiffness of limbs	Unspecific
	Scabies	Fresh leaves paste
	Glandular swellings and boils	Leaf juice

	Skin diseases	Leaf juice or paste applied
	Whooping cough	Decoction
	Cataract	Not specified
	Cough and cold	Not specified
	Gastric issues	Leaf juice by process of maceration
	Mouth ulcers	sap is swallowed after being chewed
	Toothache	Paste of leaf applied on area of pain
	Dropsy	Juice
	Leucoderma	leaf ash with butter
	Enlarged scrotum and sciatica	Unspecified
Flower	Viral fever	not specified
Seed	Edema	paste taken daily
Whole plant	Cyst	Extracted oil is applied externally
	Whooping cough	dried plant
	Gout	Paste or ointment applied externally
	Bronchial asthma	Powder mixed with honey
	Tonsillitis	applied by formulation
	Dysuria	used by formulation
	Respiratory	Unspecified
	Toothache	Decoction
	Greying of hair	oil extract
	Pyorrhoea	Decoction

Fig.:2 (Structures* and Molecular Formulas of Some important Phytochemicals which isolated and identified from *Barleria prionitis* Linn.)

Barlerin[20] (Iridoid glycosides) **$C_{19}H_{28}O_{12}$** 	**Melilotic acid** [23] (Phenolic acid) **$C_9H_{10}O_3$** 	**Vanillic acid**[24] (Dihydroxybenzoic acid derivative) **$C_8H_8O_4$** 
Acetylbarlerin[20] (Iridoid glycosides) **$C_{21}H_{30}O_{13}$** 	**β-sitosterol** [25] (Phytosterols) **$C_{29}H_{50}O$** 	**6-hydroxyflavone** [24] (Flavone) **$C_{15}H_{10}O_3$** 
Shanzhiside methyl ester [21] (Iridoid glycosides) **$C_{17}H_{26}O_{11}$**	**Apigenin-7-O-β-D-glucoside**[22] (Glycosyloxyflavone) **$C_{21}H_{20}O_{10}$**	**Pipataline** [22] (Terpenoid) **$C_{19}H_{28}O_2$**

		
Lupeol [22] (Triterpene) **$C_{30}H_{50}O$** 	**Verbascoside** [20] (Caffeoyl phenylethanoid glycoside) **$C_{29}H_{36}O_{15}$** 	

*** Source for Chemical structures:** PubChem**:** https://pubchem.ncbi.nlm.nih.gov/

Pharmacological Importance of *Barleria prionitis* L.

Because of its long history of use, *B. prionitis*Linn.has been studied for a variety of pharmacological activities. Several in vitro and in vivo studies on various cell lines and animals have been published. These review aims to provide an overview of the pharmacological importance reported on *B. prionitis*Linn.in the past and present.

Anti-Viral Activity:

Two iridoid glycosides, 6-O-trans-p-coumaroyl-8-O-acetylshanzhiside methyl ester and its cis isomer from plant, were isolated from Barleria prionitis and are effective against respiratory syncytial virus. [20]

Antibacterial Activity:

*Barleriaprionitis*Linn.petroleum ether extract was more effective against *Bacillus subtilis* and *Pseudomonas putida*. While *Barleriaprionitis* Linn. ethanol extract was effective against *Pseudomonas putida.*[27] From the ethanolic extract of *B. prionitis* L. antibacterial phytochemicals such as balarenone, pipataline, and 13,14-secco-stigmasta-5, 14-diene-3-ol were recovered. These substances shown potent antibacterial action against *Bacillus cereus* and *Pseudomonas aeruginosa.*[22]Another study found that Different solvent extracts from *B. prionitis* leaves and stem parts demonstrated antibacterial activity against all Gram-positive bacteria studied (*Bacilluspumilus, Bacillus subtilis, Streptococcus pyogenes*, and *Bacillus cereus*) as well as Gram-negative bacteria (*Escherichia coli, Serratiamarcescens, Comamonasacidovorans*, and *Pseudomonasaeruginosa*, Methanol leaf extract against *Bacillus cereus* provided the highest level of inhibition, and pet ether leaf extract against *E. coli* came in second. *Alcaligenes faecalis* was most effectively inhibited by pet ether leaf extract, followed by methanol bark extract. When compared to the common antibacterial drugs ampicillin, tetracycline, and streptomycin, the bactericidal activity of the several *B. prionitis* extracts seemed to be nearly identical. [28]

Anti-Fungal Activity:

Saccharomyces cerevisiae, an oral pathogenic fungus, and two species of *Candida* are effectively inhibited by the various solvent extracts of the plant bark, such as acetone, methanol, and ethanol. In another study it was showed that the root and stem extract in pet ether and ethanol had a potent antifungal effect on *Candida albicans*. [29-30]

Antioxidant Activity:

Some glycosides that were isolated from the aerial portions of *B. prionitis*Linn. exhibited antioxidant action. These glycosides include barlerinoside, shanzhiside methyl ester, 6-O-trans-p-coumararoyl-8-O-acetylshanzhiside methyl ester, barlerin, acetylbarlerin, 7-methoxydiderroside, and lupinoside. [21] Using the 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay, the antioxidant activity of different fractions of a 90% methanolic extract was assessed in a different investigation. The DPPH radical scavenging ability of the hexane, chloroform, ethyl acetate, and butanol soluble fractions of the methanolic extract was calculated using ascorbic acid as the reference substance. The ethyl acetate soluble fractions had the greatest impact of all. For their antioxidant activity, these methanolic extract fractions are arranged as follows: ethyl acetate > butanol > chloroform > methanol > hexane. [31]The methanolic leaf and stem extract had the maximum antioxidant capacity and reducing power, with inhibitory concentration (IC_{50}) values of 63.41±0.32 and 81.69±0.40, respectively. The presence of phenolic substances like Barlenoside, shanzhiside methyl ester, barlerine, acetylbarlerine, 7-methoxydiderroside, and lupulinoside may be the cause of these outcomes. [32] DPPH radical, 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid), hydroxyl radical, reducing power assay, and nitrous oxide scavenging activity of various extracts of *B. prionitis* were calculated to evaluate the radical scavenging potential. The antioxidant activity of the ethanol extract and the aqueous extract of the whole plant of *B. prionitis* was examined in another study. In comparison to the water extract, the ethanol extract was the more potent antioxidant. It can be deduced that the antioxidant activity and the phenolic content of *B. prionitis* are directly correlated. [18]

Anti-Inflammatory Activity:

In one trial, a methanolic extract of *B. prionitis* Linn. at a dose of 500 mg/kg demonstrated anti-inflammatory efficacy in both the early stage and the late stage (up to 180 minutes), comparable to control and standard indomethacin. [33] Another study tested the TAF fraction from the methanol-water extract of *B. prionitis* Linn. for its ability to reduce inflammation in a variety of acute and long-term animal test types. It demonstrated an anti-inflammatory effect on known inflammatory substances as histamine, carrageenan, and dextran. Adrenalectomized rats have normal anti-inflammatory activity, demonstrating that the pituitary-adrenal axis is not responsible for the effect of fraction "TAF." Additionally, "TAF" demonstrated reduction of leukocyte migration into the region of the inflammatory insult and vascular permeability in vivo. As a typical reference medication, ibuprofen was utilised. [34] Different solvents extract from the *B. prionitis* roots were taken in a study in that, dose levels are200 and 400 mg/kg orally, these extracts were tested for their anti-inflammatory efficacy on rats with carrageenan-induced paw edoema. After determining that the aqueous extract was the most active, it was divided into four primary fractions, each of which was then put through the same testing. At doses of 200 and 400 mg/kg, respectively, AQSE fractions (FR-IV) of *B. prionitis* demonstrated greatest percentage suppression of rat paw edoema (52.56% and 55.76%).All four fractions anti-inflammatory effect was discovered to be dose-dependent. These findings offer a possible application for these plants use as an anti-inflammatory agent. [35]

Anti-Arthritic Activity:

Rats with acute non-immune arthritis caused by formaldehyde and chronic immunological arthritis caused by Freund's complete adjuvant were tested against chloroform extract from plant leaves.In Freund's complete Adjuvant-induced arthritic model, the extract demonstrated the most effective, dose-dependent substantial paw edoema seen in both the acute and chronic models, as measured by animal body weight, nociceptive threshold, and biochemical markers. For various acute and chronic animal test models for arthritis, the aqueous portion of the plant's methanol-water extract was assessed. [36]

Diuretic Activity:

When compared to furosemide at 20mg/kg, aqueous root extract (100 mg/kg) significantly increased diuresis (12.58±0.80 urine volume in 24 hours) and sodium excretion.[37]

Hepatoprotective Activity:

In several acute and long-term animal test models of hepatotoxicity, the iridoid-enriched fraction (IF) from the ethanol-water extracts of the leaves and stem of *B. prionitis* Linn. was assessed for

hepatoprotective efficacy. It provided considerable hepatoprotection against hepatotoxicity brought on by carbon tetrachloride, paracetamol and galactosamine. Silymarin served as the standard hepatoprotective medication.In the safety evaluation investigation, the oral lethal dose (LD_{50}) was discovered to be greater than 3000 mg/kg, with no abnormalities or deaths seen for 15 days after a single dose of the medication was provided. In contrast, the intraperitoneal LD_{50} was discovered to be 2530±87 mg/kg. SE (n=10) in mice.The highest changed hepatic parameters that caused liver damage in the experimental animals were reversed by "IF," revealing a significant and concentration-dependent hepatoprotective capability. [38]

Anti-Diabetic Activity:

Utilizing alloxan monohydrate, the *Barleria prionitis* plant extract was investigated. Blood glucose levels were noticeably lower in plant leaves, whereas levels of serum insulin and liver glycogen were noticeably higher. [39]

Larvicidal Activity:

In Tamil Nadu, India, larvicidal activity of several *B. prionitis* extracts against the *Culextritaeniorhynchus*, the vector of Japanese encephalitis, was evaluated. To determine the nature of the active ingredient found in the promising methanol extract fraction isolated from chloroform. The World Health Organization procedure was used to test the *B. prionitis* leaf extracts on *C. tritaeniorhynchus* fourth instar larvae, and the larval mortalities were recorded at various concentrations (6.25 g/ml). Probit analysis was used to determine the lethal concentrations of the *B. prionitis* leaf extracts for 24 hours. This study established the possibility of using *B. prionitis* as a crucial element in the Vector control programme for the elimination of various dangerous diseases. [40]

Cytotoxic Activity:

Human Renal Cancer Cell Line 786-O and Human Ovarian Cancer Cell Line Ovkar-3 were examined in relation to *Barleria prionitis* methanolic extract. The in-vitro tests were conducted at dose levels of 10, 20, 40, and 80 µg/ml. Comparing the plant extracts to the positive control Adriamycin, they are not cytotoxic (ADR). [41]Data on the cytotoxic effects of the ethanolic extract of *B. prionitis* were obtained using the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay on human gingival fibroblast and human dermal fibroblast cell lines. More than 1,000 µg/mlof test was discovered to be required in order to 50% block cell proliferation (CTC_{50}). It was discovered that chlorhexidine was more cytotoxic, with a CTC_{50} value of 12.5–25 µg/ml. *B. prionitis* ethanolic extract was discovered to be substantially more cytotoxic ($p<0.05$) than the control.[42]

Anthelmintic Activity:

When compared to the standard anthelmintic drug albendazole, aqueous and ethanolic extract of the entire plant of *B. prionitis* exhibited anthelmintic activity using *Pheretimaposthuma* worms in a dose-dependent manner, giving the shortest time of paralysis (P) at 50, 75, and death (D) with 100 mg/ml concentration. [43-44]

Enzyme Inhibitory Activity:

Pipataline, lupeol, and balarenone, three identified phytoconstituents from the ethanolic extract of *B. prionitis*, exhibit inhibitory activity against GST (IC_{50}value was 160 µg/ml). AChE inhibitory action was found in the biochemical compound 8-amino-7-hydroxypipataline, with an IC_{50} value of 36.8 µg/ml. [13,45]]

Anticancer:

When blood vessel cysts are in their acute stage, the oil from the entire *B. prionitis* plant is used externally. It has powerful anti-cancer properties.[11,41,46]

Central Nervous System (CNS) Activity:

Swiss albino mice(*Mus musculus*) were used to determine the CNS activity of a 70% ethanol extract of *B. prionitis* Linn. leaves. The actophotometer was used to examine general behaviour. Study findings indicate that the test medication exhibits stimulant action. However, the stimulant action appeared to be less than that of the market-available standard medication, fluoxetine hydrochloride.Fluoxetine was

found to boost activity in the animals by 91.93%, while the test substance from *B. prionitis* only stimulated the animal by 49.72%. According to the findings, *B. prionitis* ethanol extract has antidepressant efficacy when tested in animal models. [47]

Antihypertensive Activity:

In a study, uni-nephrectomised (Surgical excision of one kidney) male albino Wistar rats (outbred albino rat) were used to test the antihypertensive activity. Animals received twice-weekly subcutaneous injections of DOCA (25 mg/kg BW) in dimethyl formamide (vehicle) solution, and salt was provided throughout the experiment by replacing water with 1% NaCl solution.Six groups of six rats each were created by randomly dividing the animals. Group I acted as the healthy control, and group II as the ill control receiving DOCA-salt treatment for hypertension. Group III was given an Enalapril injection (48 mg/kg, IP). Groups IV and V were hypertensive rats that got varying doses of B. prionitis, 200 and 400 mg/kg BW, and group VI received nifedipine 20 mg/kg BW. For six weeks, test medications or nifedipine were given orally once each day. The 400 mg/kg BW dose of *B. prionitis* had a better effect than the 200 mg/kg BW dose, this study demonstrated the strongest antihypertensive effects. [48]

Mast Cell Stabilization and Membrane Protection Activity:

When the membrane stabilisation and mast cell protection abilities of a hydroalcoholic whole-plant extract of *B. prionitis* were evaluated, the results showed a considerable suppression of the hyposaline-induced erythrocyte membrane haemolysis. Rats treated with the extract had much less haemolysis of the erythrocytes and degranulation of the mesentery mast cells. [49]

Anti-Nociceptive Activity:

200 mg/kg of the *B. prionitis* flower extract increased the analgesiometer's produced force and demonstrated resistance to pain. Additionally, it reduced discomfort brought on by acetic acid by 30.6%, compared to 34.6% for Phenylbutazone (100mg/kg). [50]

Gastro Protective Activity:

In a rat model of ethanol-induced stomach ulcer, the 500 mg/kg BW methanolic extract of the leaf inhibited the ulcer by 67.7 and 75.5%. The same plant's extract inhibited indomethancin-induced stomach ulcer models by 70.3 and 62.2%, respectively.[51]

Antifertility Activity:

In a different investigation, we isolated the active ingredient Beta-sitosterol from the methanolic root extract of *B. prionitis* and tested the antifertility potential of the compound in male albino rats. For 60 days, the rats were given Beta-sitosterol at doses of 5, 15, and 25 mg/kg body weight (Group IV), as well as olive oil (Group I, the control group). Body weight was assessed every week. The findings showed that spermatogenesis and fertility are impaired by Beta-sitosterol from *B. prionitis* roots, which suggests that Beta-sitosterol from *B. prionitis* can be exploited for the creation of the male contraceptive medication, which has very few options currently accessible. [52]This *Barleria* plant extract shows antispermatogenic action. [53-55]In other experiment, male rats received 100 mg/day of the methanolic *B. prionitis* L. root extract orally. The extract completely decreased male rat'sability to reproduce during the course of the study's 60-day length. Conflicts in the Leydig and Sertoli cells roles, which led to the physio morphological processes of spermatogenesis, looked to be how *Barleria's* impacts on infertility were resolved.[56]

Anti-Cataract Function:

In a study, selenite- and galactose-induced cataract models were used to calculate the anticataract activity of *B. prionitis*. Four hours prior to the treatment of selenite, *B. prionitis* was administered into the test group of rats. The test rats got oral doses of 200 and 400 mg/kg of *B. prionitis* every day, while the control rats received just vehicle. At regular intervals, the stages of a cataract were evaluated.A morphological analysis showed that rats treated with selenite have more opacities than they would normally have. In control lenses as opposed to normal lenses, there was a decrease in glutathione levels and an increase in malondialdehyde levels. These findings showed that both selenite-induced cataract and cataract caused by galactose had their start and advancement slowed. Its anti-cataract activity was

demonstrated by slit-lamp microscopic pictures, which may have been caused by its antioxidant potential. [57]

Conclusion:

In this review article,it was showed that, in traditional medicinal systems like Ayurveda, Homeopathy, and Naturopathy, *Barleria prionitis* plays a crucial role. The ethnobotanical study found that *B. prionitis* is a very safe and useful therapeutic plant. Numerous bioactive phytoconstituents, including flavonoids, glycosides, tannins, saponin, and steroids, were found in the plant after qualitative and quantitative examination. This in-depth analysis of *B. prionitis* briefly describes a variety of pharmacological effects, such as anti-oxidant, anti-inflammatory, antibacterial, anti-arthritic, antifungal, hepatoprotective, antidiabetic, antiviral, antihelminthic, mast cell stabilising, immunomodulatory, antifertility, antihypertensive, antidiarrheal, gastroprotective, antipyretic, diuretic. This thorough analysis also highlights its phytochemical profile and pharmacological escalation, which will be favourable for future researchers, in addition to its numerous folks uses.

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