Phytochemistry and Ethnopharmacological Importance of *Abrus precatorius* L.: A Comprehensive Review.

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Abstract: Medicinal and Aromatic Plants (MAPs) are indeed a vital part of biological diversity for having novel bioactive compounds and their therapeutic approach since the ancient time. *Abrus precatorius* L. commonly known as 'Kunch' belonging to the family Fabaceae show its worldwide distribution. This plant is traditionally used as a significant medicinal herb by the ethnic groups and tribal communities from decades after decades. Tribal people have not any scientific knowledge on the therapeutic properties of medicinal plants but they have a practical experience on the application, mode of administration and use of such type of medicinal plants on the basis of several ailments. Researchers have been reported that several kinds of secondary metabolites and bioactive compounds such as alkaloids, phenolics, flavonoids and terpenoids are found in the whole plant body especially seeds, leaf extracts, young petiole which have mainly shown the anti-microbial, anti-diabetic, anti-inflammatory and anti-tumor activities to cure different kinds of ailments. The distinct bioactive compound 'abrin' is isolated from the seeds of this plant having anti-cancer and anti-fertility activities. It is also reported that the phytochemical compounds of *A. precatorius* L. are highly active against both gram-positive and gram-negative bacteria, virus even fungal pathogens which are responsible for human diseases. This present study aims to explore the phytochemistry and simultaneously the medicinal, therapeutic and ethnopharmacological significance of this medicinal herb and its beneficial applications to the human beings and social welfare.

Keywords: *Abrus precatorius* L., phytochemistry, secondary metabolites, abrin, ethnomedicine, ethnopharmacological activities.

Introduction: We, the civilian of the third decades of twenty first century, have been suffering various ailments due to the gradual increasing of environmental pollution, global warming and harmful anthropogenic activities day by day. Plants have been pharmacologically investigated and documented for their disease curative properties, commonly known as the medicinal plants. These plants are being used in the Indian system of medicine since the period of Charaka and Sushruta. Allopathic medicines are become threatened for their negative impacts to our health and high cost in this time. In this present scenario, herbal remedies and their positive impacts towards the mankind have been drawn an attention between doctors and biomedical scientists. In the subcontinent regions of our country have been used the ayurvedic system of medicines from their ancestral generation to till now. Most of the herbal medicines are based on herbs, shrubs and climbers which are used by almost 75% of the global population. *Abrus precatorius* L., the

member of the family Fabaceae under the subfamily Papilionaceae, is an ethnomedicinally important plant distributed throughout the parts of Indian subcontinent and the eastern west region. William Boericki described that *A. precatorius* is a valuable medicinal plant in the Homeopathic Materia Medica at first. This plant species is morphologically distinct for its climbing nature and red colored fruits with black colored seeds. These seeds have a bioactive constituent, 'Abrin' is used as a purgative and abortive whereas the root extracts used against common cold especially cough and headache, reported in the Ayurvadic system of medicine. Ethnobotanical documentation revealed that in certain tribal region, indigenous group of people used the leaf of this plant for the relief of mouth ulcer and dental pain. Another important bioactive compound 'Saponin' used in the treatment of inflammation, wounds and body sores.

Importance of the study: -

1. To establish the man-plant relationship in developing human society & sustainable livelihood.
2. Understanding the herbal remedies and medicinal practices of ethnic society.
3. Scientific investigation of indigenous knowledge existing among different tribal communities and ethnic groups to unveil new treatment process, therapeutic methods and new drug development with scientific approach.
4. Sustainable utilization of natural bio-resources.

Aims and objectives of the study: -

1. Documentation and identification of such kind of medicinally important plants.
2. To bring the public awareness and consciousness of the utility and the use of herbal remedies instead of allopathic medicines.
3. Proper conservation and maintenance of this plant group is an urgent need.
4. It is urgent to bring the consciousness among the society that herbal medicines have no such side effects (consumption with proper medical guidelines) and for all individuals of different age groups.
5. Commercialization of the medicinal plant extraction in the form of tablet, capsule or syrup is become prioritized for the mode of administration than compare to traditional systems.
6. To progress the rural economy by commercialization of medicinal plants.

Survey of Literature: Literature survey revealed about the taxonomic hierarchy, morphological description, ethnomedicinal uses, phytochemistry of different plant parts and ethnopharmacological activities of *Abrus precatorius* L. in the followings and all came from library databases and electronic retrieval systems including PubMed, Science Direct, Scopus, Google Scholar and Research Gate which may provide current and new scientific development in research of Phytochemistry and Ethnopharmacology and the all other aspects of*Abrus*.

Taxonomic hierarchy of *Abrus precatorius* L.:

Kingdom: - Plantae

Division: - Magnoliophyta

Class: - Magnoliopsida

Order: - Fabales

Family: - Fabaceae

Genus: - *Abrus*

Species: - *A. precatorius*

Common names (According to languages): -

Common names or more specifically to say the vernacular names are variable for different geographical regions depending on their mother language and sociocultural activities.

Some of them are followings:

Jequirity(English),Gumchi,Chanothi(Gujarati),Gunchi,Gunja,Gaunchi,Rati(Hindi),Gunja(Marathi),Mulati(Punjab),Gunja(Sanskrit),Guruginia(Telugu),Ghunchi(Urdu),Kunch,Chunhali (Bengali),Shangir(Kashmiri),Kunni,Gundumani (Malyalam). (Rastogy RP, 1998).

Common name (According to different countries): -

From the several countries of the world, some selected of them are listed below:

Rosary pea (Egypt), Crab's eye (Nepal), Jequirity (Philippines), Precatory bean (USA), Saga (Indonesia), Gunchi (Pakistan), Rati gedi (Nepal), Weglis (Indonesia)

Morphological description: -

Habit: Climbing herb; can grow up to 5–10-meter area.

Habitat: Terrestrial.

Phenology: Flowers in winter; fruits ripen in summer (Kirtikar KR, 2005)

Root: Branched tap root system is present.

Leaf: Pinnately compound leaves with small oval leaflets showing alternate phyllotaxy.

Inflorescence: Racemose type or panicles.

Flower: Flowers are like others member of pea family; white or purple in colour, zygomorphic with a length of 3 to 10 cm.

Fruit: Red coloured fruits have a nutlike shape with nearabout 3cm in length.

Seed: Red coloredseeds are ovoid shaped with 1-2 cm length and having a black colored spot at tip position.

Photoplate of different plant parts of *Abrus precatorius* : -

Figure 1: Flower (left), pod (middle) and fruits (right) of *Abrus precatorius* (The University of Queensland, 2013)

Table 1: Ethnomedicinal Uses (Narendra Garniya*et al.*, 2014 & Attal AR *et al*., 2010): -

Scientific name	Family	Local name	Plant parts used	Mode of administration	Disease cured
***Abrus precatorius*L.**	Fabaceae	Kunch	1.Leaves 2.Seeds 3.Roots	Extraction and Decoction.	Nerve tonic, Mouth ulcer, Common cold, cough, bronchitis, gonorrhea, jaundice

Phytochemistry of different parts of *Abrus precatorius* L. :

Several kinds of secondary metabolites and bioactive compounds are present in *A. precatorius* include alkaloids, flavonoids like luteolin, abrectorin, desmethoxycentaviridin-7-O-rutinoside (Bhardwaj DK, 1980). Others compound such as primary metabolites (Carbohydrate, protein, amino acids) and secondary metabolite derivative compounds such as triterpene glycosides, saponins, steroids are found in the whole plant body extracts. Glycyrrhizin, a sweet tasting major phytoconstituent present in root and leaves of *A. precatorius* (Akinloye BA, 1981).

Here, we discussed some bioactive compounds mainly unique to *A. precatorius* L.

Abrin: -

Abrin is a toxic glycoprotein found in the seeds of *A. precatorius*. It is composed of two peptide chains, (A and B) linked by a disulphide bond. The molecular weight of abrin approximately 63,000 Da, where chain A contain 253 amino acids and its molecular weight approx. 29,000 Da and chain B contain 267 amino acids and its molecular weight 30,000 Da. Mechanism of Abrin consists the inhibition of protein synthesis and leading to the programmed cell death. This compound is relatively stable under acidic conditions, high pH and sensitive to heat and proteolytic enzymes. It is mainly composed of mannose, glucose and galactose residues with nearabout 10% weight of carbohydrate. Abrin's composition makes it a potent toxin having therapeutic application in medicine such as carcinoma treatment and others immunotherapy (Hermann MS *et al*., 1981).

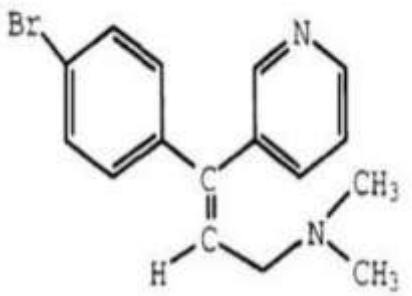


Fig 2. Chemical structure of 'Abrin' found in *A. precatorius* L.

Campestanol: -

Campestanol is another major triterpenoid compound found in the root of *A. precatorius*. Molecular formula of campestanol is $C_{28}H_{50}O$. It is a pentacyclic triterpenoid with a dammarane skeleton. It is soluble in organic solvent like Chloroform, methanol, and ethyl acetate. Researchers have been reported that this bioactive compound has cytotoxic, antimicrobial, anti-inflammatory and antioxidant properties. However, furthermore study and research are urgent to understand the mechanism and therapeutic application of this compound (Aserculeratne SN *et al*., 1985).

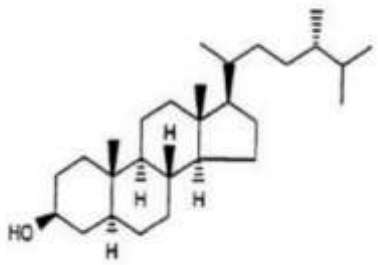


Fig 3. Chemical structure of 'campestanol' found in *A. precatorius* L.

Triterpenoids derivative compounds: -

Others triterpenoid compounds like subprogenin D, abrusgenic acid, triptotriterpenic acid B, abruslactone A, abrusogenin and abrusoside C were extracted and isolated from the leaves and stems of *A. precatorius* L. (Ragasa, CY *et al*., 2013). The dichloromethane extraction was found in the pericarp of *A. precatorius* fruits (Solanki, A *et al*., 2012)

Flavonoids and Anthocyanins: -

Seeds of *A. precatorius* contains high quality of flavonoids and anthocyanin-based compounds with pharmacological properties. Here, we documented five types of flavonoids found in this plant.

Quercetin: - A flavonoid with antioxidant and anti-inflammatory properties.
Kaempferol: - A flavonoid with antioxidant and anti-inflammatory properties.
Isorhapontigenin: - A flavonol with antioxidant and antimicrobial properties.
Rhapontigenin: - A flavonol with antioxidant and anti-inflammatory properties.
Abrusin: - A flavonol with antioxidant and cytotoxic properties.
Anthocyanins are also present in the seeds of *A. precatorius* (Acharya D *et al*., 2004). Some of them are Cyanidin-3-glucoside, Delphinidin-3-glucoside, Petunidin-3-glycoside, Malvidin-3-glucoside.

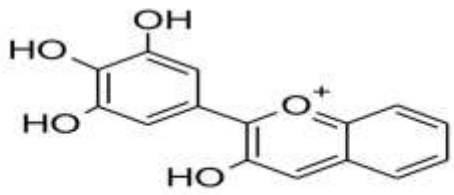


Fig 4. Chemical structure of Delphinidin-3-glucoside (anthocyanin) present in *Abrus precatorius* L.

Carbohydrates and Amino acids: -

Carbohydrates and amino acids are the primary metabolites present in every plant species. In *A. precatorius* carbohydrates such as galactose, arabinose, and xylose are found in the aerial parts of the plant (Acharya R *et al*., 2013). Arabinose is a pentose sugar found in the cell wall of this plant. Others carbohydrate compound such as starch, cellulose, glycosides, pectins are also present.

The amino acids are the building blocks of polypeptides and proteins which are essential for various cellular processes, including growth, development and defense mechanism. Some of the amino acids like aspartic acid, glutamic acid also plays roles in nitrogen metabolism and transportation. The specific amino acid composition may vary depending on several factors like plant part, growth stage and environmental conditions. Seeds of *A. precatorius* plant species contains several kinds of essential amino acids like serine, alanine, valine and methyl ester. Rest important amino acids are tyrosine, tryptophan, phenylalanine etc.

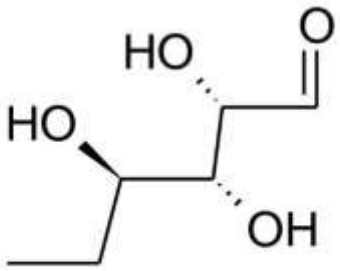
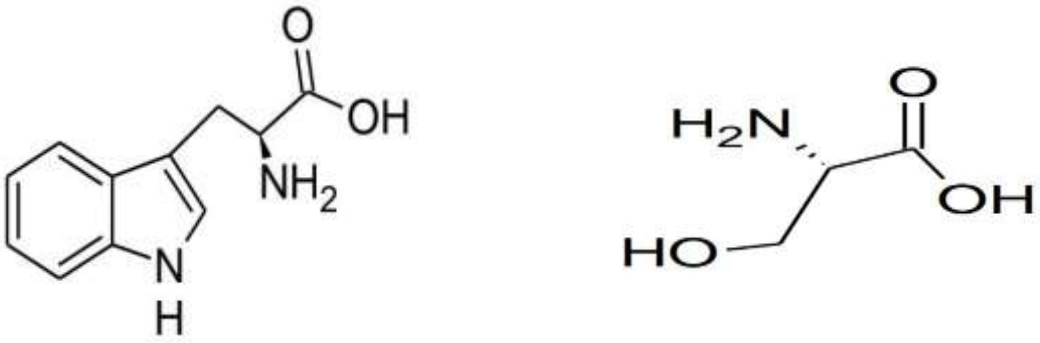


Fig 5. Chemical structure of pentose sugar 'Arabinose' in *A. precatorius* L.



Tryptophan Serine

Fig 6. Chemical structure of Amino acids presents in *Abrus precatorius* L.

Ethnopharmacological activities of *Abrus precatorius* L.: -

Abrus precatorius L., commonly known as rosary pea, jequirity bean, or crab's eye, is a plant species widely used in traditional medicine systems. Its various parts, particularly the seeds, leaves and roots, have been reported to possess diverse pharmacological activities. This plant is extensively used as abortifacient, aphrodisiac, laxative and sedative. The roots of *A. precatorius* are used for gonorrhoea, jaundice and haemoglobinuric bile. The oil found from the extraction of seeds is said to stimulate the growth and density of human hair. Glycyrrhizin is an active phytoconstituents of the plant. The leaves of this plant are used as traditional medicine for their anti-supportive properties.

Various parts of *Abrus precatorius* are having different pharmacological activity.This plant is having properties like anti-viral, anti-diabetic, anti-oxidative, anti-microbial, anti-inflammatory, anti-tumor, anti-fertility, anti-migraine, mutagenic activity, neuromuscular, bronchodilator activity.

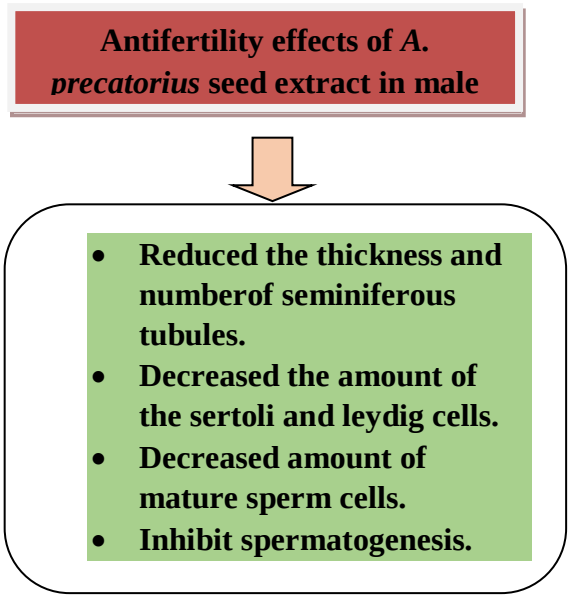
Antimicrobial activity: - Extracts from different parts of these plants including leaves, stem and seed oil have shown antimicrobial properties against some medicinally important pathogens such as both gram-positive and gram-negative bacteria like *Staphylococcus aureus, Escherechia coli* and *Pseudomonas aeruginosa, Bacillus subtilis* and virus or fungi, *Albugocandida* (Abbassy AM *et al*., 2016). The anti-microbial activity is attributed to various phytochemical compounds present in the plant including flavonoids, alkaloids and glycosides (Arora R *et al*., 2008). Researchers have been reported that different solvents (e.g.: Ethanol, methanol, aqueous) have been used to potentially significant anti-microbial compounds from leaves, seeds and roots (Chaudhuri SK *et al*., extract p 2012)

Anti-inflammatory activity: - The anti-inflammatory potential of *A. precatorius* have been found for the presence of two compounds like abruslactone and abrusosides (Chukuo S *et al*., 1995). Researchers have also reported two triterpenoid compounds, such as saponin 1 and saponin 2 which may contribute to its anti-inflammatory effects (Bhatia M *et al*., 2013 and Georgewill OA, 2009).

Anti-diabetic activity: - Extracts from the seeds, leaves and roots of *A. precatorius* have shown potential in the management of diabetes mellitus. They have been reported to possess insulin-sensitizing effects, as well as the ability to inhibit enzyme, potentially showing carbohydrate digestion and absorption. Active compounds are glycyrrhizin, arbusoginenin and arbusosides E are among the compound contribute to its anti-diabetic effects. Some researchers suggest that it may improve insulin sensitivity in human tissues (Chandraker SK *et al*., 2014)

Anti-tumor activity: - Certain phytochemical compounds isolated from *A. precatorius* such as abrin, abrusosides and glycyrrhizin have exhibited cytotoxic and antitumor activity against various cancer cell lines including breast, lung, colon and liver cancer cells (Ghosh D *et al*., 2007). It inhibits the growth and proliferation of cancer cells, potentially leading to tumor regression. The compounds induce programmed cell death (apoptosis) in cancer cell (Reddy SV *et al*., 1963).

Anti-fertility activity: - The most unique and salient feature of *A. precatorius* is anti-fertility properties. Theextracts have been shown to exhibit contraceptive effects in both male and female. It reduces to sperm motility and density of semen whereas it inhibits ovulation in female. It also regulates the hormonal level of female body that disrupts the fertilization and zygote implantation process. It also stimulates urine contraction, which may contribute to its anti-fertility effects. An ethnobotanical report suggested that if the seeds extraction is taken within 3 days of unprotected intercourse, then the chance of conceive of a woman is <90% (Agarwal SS *et al*., 1970). Literature survey displayed that the alcoholic seed extracts of *A. precatorius* for 60 days at a dose of 100 mg/kg significantly reduces sperm motility in mammals. Scanning electron microscopic (SEM) studies on sperm morphology explored acrosomal damage, decapacitation and small size of tail after exposure of seed extract (Sinha R *et al*., 1990).



Anti-migraine activity: - The antimigraine activity of this plant has been shown to inhibit serotonin, a neurotransmitter involved in the migraine pathophysiology (Khairnar AS *et al*.,2011). This plant extract influence other neurotransmitter such as dopamine & GABA (Gama aminobutyric acid) which involve in migraine and headache regulation. It helps smooth muscle and reduce spasms, which can contribute to migraine relief (Nabar M *et al*., 2011).

Mutagenic activity: - The mutagenic activity of *A. precatorius* plant extract has been shown to exhibit genotoxicity which mean they can damage genetic material (DNA) in various cell and tissue types including human lymphocytes and bacterial cell (Panneerselvam K *et al*.,2000). The two main alkaloid compounds– Abrin and abrusine are responsible for mutagenic activity (PrashithKekuda TR *et al*., 2010).

Neuromuscular activity: - The plant (*Abrus precatorius* L.) extracts have been found to cause neuromuscular blockage, which may be useful in treating certain medical conditions, such as tetanus and the extract may have neuroprotective properties, potentially helping to prevent most common neurodegenerative diseases such as 'Alzheimer's' and 'Parkinson's'. The extract of *Abrus* help to muscle relaxation, which may be useful in treating muscle spasms and cramps. But, in high dose it causes muscle weakness and paralysis due to its neuromuscular blocking activities (Gul ZM *et al*., 2013).

Bronchodilator activity: - *A. precatorius* leaf extracts have the bronchodilator activities that are the traditional uses of the plant in the management of 'asthma'. Inhibition of the constructions induced by acetylcholine or histamine; present in the leaf extract of *A. precatorius* having the anti-histaminic or anti-cholinergic activity. The methanolic extract of the leaves of this plant has broncho-dilatory effects and its use traditionally in the management of 'asthma' (Mensha YA *et al*., 2011).

Anti-cancer activity: -The in-vitro activity of aqueous extract of *Abrus precatorius* leaves could be potentially useful for the development of therapeutic agents against murinmestocytoma cells. Researchers study that, the aqueous extract was evaluated as a promising anti-cancer solution using MTT assay. The aqueous extract of *Abrus* leaf exhibits anti-cancer activityagainst human breastcancer lines. The anti-cancer activity of *Abrus precatorius* plant is attributed to the presence of compounds like tannins, alkaloids, steroids, saponins, terpenoid and flavonoids demonstrated marked inhibitory effect and have properties to induce apoptosis on various types of cancer. ((Lebri M *et al*., 2015)

Immunomodulating activity: -

Abrus precatorius plant has been found to exhibit immunomodulating activity, meaning it can modify or regulate the immune system response. *Abrus precatorius* extract have been shown to stimulate the activity of immune cells like macrophages, lymphocytes and natural killer cells. It produces to antibodies which help fight infection. Its activation of immune cells like T-cells and macrophages. It enhances the phagocytosis, the process by which immune cells engulf and destroy pathogen. The immunomodulating activity of *Abrus precatorius* is presence of compound like abrin, agglutinin and glycyrrhizin (Bhatia M *et al.*, 2013).

Immunostimulating activity: -

Abrin-B is derived from seed of *Abrus precatorius* causing strong agglutination of cells. The agglutination increases according to the order differentiation in cells. A non-toxic dose of abrin can be potential in immune response of a host, like increase in total leucocytes, weights of thymus and spleen (Kareppa MB *et al*.)

Anti-oxidant activity: -The leaf extract of *Abrus precatorius* have been shown to the ability to the function as an anti-oxidant agent. The extracts of this plant also contain significant amount of flavonoids & phenolic which contribute to anti-oxidant activity. This plant extracts show inhibition in lipid peroxidation, which can damage cell membrane. They have been ascribed to have resilient antioxidant activity and help to protect cells against oxidative damage caused by free radicals due to redox properties, which allow them to acts as reducing agents, singlet oxygen quenchers and hydrogen doner. (Gul ZM *et al*., 2013).

Anti-proliferative activity: -

The anti-proliferative effect was quantified in terms of cytotoxicity. *Abrus precatorius* leaf extract are potential anti-proliferative activities might be due to the synergistic actions to bioactive compounds.Therefore, the plant has promising compounds to be tested as potential anti-oxidant drugs for treatment of diseases result from oxidative stress.

Anti-allergic activity

Abrus precatorius has been found to exhibit anti-allergic activity, i.e. it can help alleviate allergic reaction and symptoms. Aqueous extract of *Abrus precatorius*, abruquinones A, B, D and F showed strong anti-allergic effects, it inhibits the release of histamine, a key mediator of allergic reaction. It inhibits the release of twoallergic mediator like leukotrienes and prostaglandin. *Abrus precatorius plant* potential as a treatment for allergic disease like asthma, atopic dermatitis and allergic rhinitis. The anti-allergic effect present within extracts of *Abrus precatorius* may be due to the presence of some compound like abrin, agglutinin, glycyrrhizin and phenolic acids (Kuo SC *et al*, 1995).

Wound healing activity: - The wound healing activity of *Abrus precatorius* is red and black colour seeds and methanol insoluble fraction of white form resulted in early wound healing activity, which may be due to the presence of gums, mucilages, tannins or phenolic compounds of seeds. The plant extract has been shown to enhance collagen synthesis, which promoting tissue repair. *Abrus precatorius* plant shows anti-microbial activity, it reducing the risk of wound infection (Garaniya N *et al*.,).

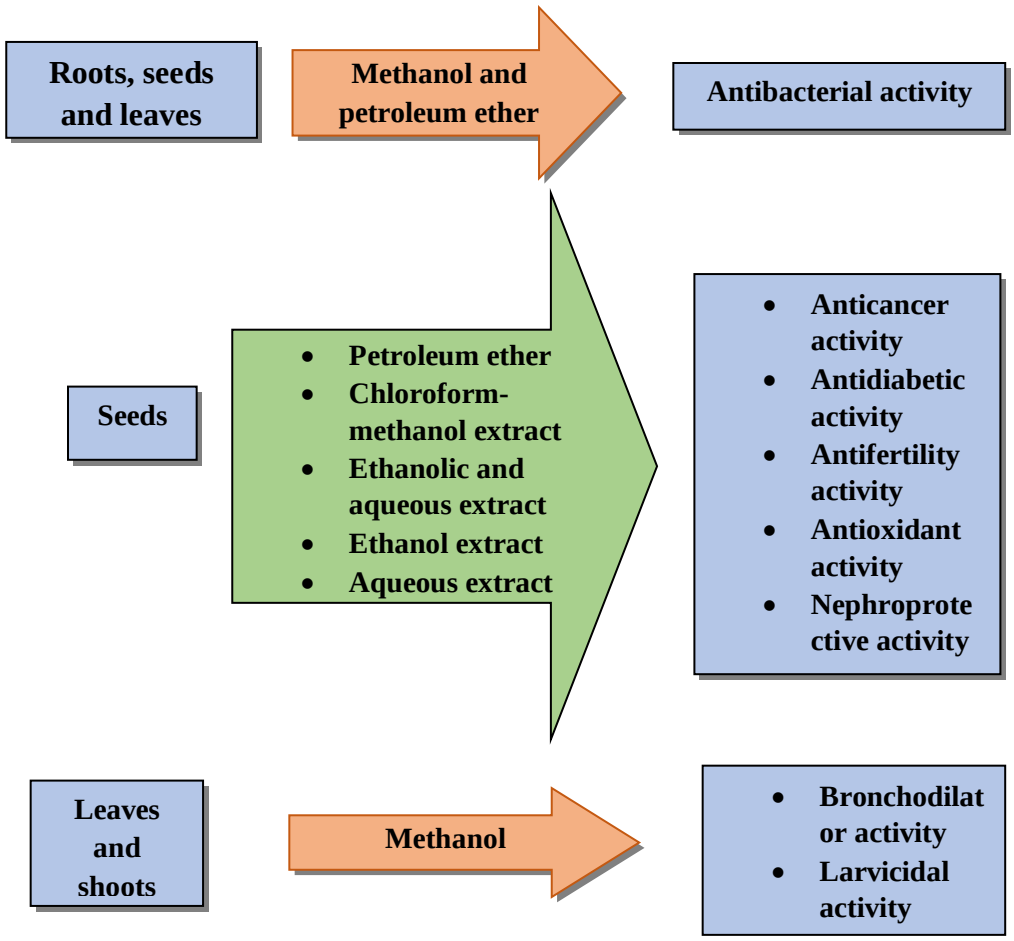
Fig 7. Bright coloured seeds of *Abrus precatorius*

Other uses of seed: - Seeds have the potentiality of good insecticide and antimicrobial activity. Seeds are nutritious and used as food after cooking that destroys the poison of seeds. Bright coloured seeds are artificially constructed to make necklaces and other ornaments. In earlier days, these seeds were using as unit of weight to measure gold. One seed is called **Gunja** or **Rathi**. 1 Ratti (Gunja) = 125.5 mg

Table 2: Chemical analysis of seed (Chaudhari SK., 2012): -

Component	**Value**
Nitrogen	6.72%
Crude protein	39.20%
Crude fibre	9.08%
Carbohydrates	42.42%
Water soluble carbohydrates (at room temperature)	9.91 (g glucose/100g seed)
Water soluble carbohydrate (at 1000C temp.)	18.72 (g glucose/100g seed)
Total soluble reducing substances (at room temperature)	2.18 (g glucose/100g seed)
Total soluble reducing substances	2.43 (g glucose/100g seed)

Table 3: Different parts of the plant show different activities based on different extraction types: -



Forensic significance of *A. precatorius*: -

Abrus precatorius has a significant approach in Forensic science because this plant is extensively used for homicidal and suicidal purposes due to its toxicity (Khajja SB *et al*., 2014). The seeds of this plant contain a number of chemical constituents like proteins, amino acids, alkaloids, steroids etc. Among them, the most important toxic protein is 'abrin'. Seeds and leaves of the plants are highly poisonous and lethal to the human beings if it is consumed with excessive dose. The unripe seed has a soft and easily broken seed coat and is very harmful to its abrin content (Adedapo AA *et al*,. 2007). Clinical toxicosis reflects primarily damage to the gastrointestinal (GI) tracts and stomach that leads to vomiting, weakness and finally death of the consumer.Rest of these, *Abrus*poisoning generally causes abdominal pain, bloody diarrhoea, headache and convulsions (Pillay VV *et al*., 2005). Several medical reports suggest that the death due to 'multi-organ failure' is caused by abrin poisoning.

Toxicological analysis is not useful in the case of abrin poisoning, but thin layer chromatography (TLC) method is useful to confirm the cause of poisoning by utilizing the patient's serum. There is no antidote in the treatment of *Abrus* poisoning; generally, the treatment involves the timely decontamination of stomach wash and supportive measures (Subhramanyan D *et al.*, 2008).

The first important point is the reorganization of poisoning during life that is the point of view both from the medical jurist and as a forensic crime scene investigator which helps to solve the crime and detect the poisonous plant material from the crime spot. Identification of 'abrin' is most important to determine the cause of death. On the basis of plant origin toxicity, forensic scientist can determine whether it is suicide, homicide or accidental case.

Conclusion: Thorough literature survey explored that *Abrus precatorius* L. is considered as a potent source of unique natural products (secondary metabolites/bioactive compounds) for drug development and medicine formation against various harmful diseases. This is an ethnomedicinally important herbal plant used by several ethnic groups and indigenous communities. The young leaves, seeds, roots and stems are used in traditional folklore medicine. The present review work revealed, most of the phytochemical compound widely found in the plant body till now which are responsible for its pharmacological activities. Various therapeutic claims have been reported as the plant is faming widespread popularity and variability in terms of traditional medicinal uses. So, more investigations and research work are very much urgent and needful to unveil unidentified bioactive compounds with potential therapeutic benefits. The present article exposes various pharmaceutical properties of *Abrus* i.e., anti-microbial, anti-inflammatory, anti-diabetic, anti-tumor, anti-fertility etc. It is already proved that allopathic treatment and anti-biotic medicines have many side effects to the human being after a certain period of time, whereas the herbal medicines have no side effect if it is properly used with proper dose. Researchers should develop the mode of administration of herbal plants with scientific way to maintain its proper dose by reducing side effects. Another important point is to keep up the low-price value of herbal medicine for the accessibility of all class of people. Proper utilization and conservation of this kind of medicinally important plant group is an urgent priority for medicine and drug formulation from these phytoresources. Government (National Medicinal Plant Board and State Medicinal Plant Board) should take the initial necessary steps for the utilization of medicinal plant species and to prevent their extinction from anthropogenic activities in this present scenario. There is no doubt that *Abrus precatorius* L. is a promising candidate as a multipurpose medicinal agent for its high potential pharmacological applications. Therefore, it is hereby concluded that not only the Government but it is the responsibility for each and every citizen of our country to conserve the medicinal plants like *A. precatorius* L. to cure common diseases, bring the consciousness among the poor-rural people about their importance, preservation of biodiversity as well as to create the sustainable man-plant relationship.

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