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RESEARCH ARTICLE

EKSAR GANA : A REVIEW

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Abstract

Ayurveda, the ancient science of life, provides a well-structured system for the categorization and therapeutic application of medicinal herbs. One such classification is "Gana," or group, which clusters herbs with similar therapeutic actions. Eksara Gana[1] is a specific group of eighteenn medicinal herbs known for their potent Vishaghna (anti-toxic) properties. This review synthesizes information from classical Ayurvedic texts and contemporary research to present a thorough understanding of Eksara Gana. The primary aim is to explore the pharmacological characteristics, traditional applications, and clinical significance of these herbs, particularly in managing cases of poisoning and envenomation. The paper also aims to bridge classical Ayurvedic principles with current scientific interpretations, highlighting the importance of these herbs in integrative medicine.

Introduction:-

Ayurveda, the holistic medical system rooted in ancient Indian philosophy, describes various formulations and groupings of herbs to promote health and combat disease. Among these, Gana represents a unique classification where herbs are grouped based on their shared pharmacological actions. Eksara Gana is one such group, consisting of eighteen herbs explicitly described for their Vishaghna (anti-poisonous) potential in the classical texts of Charaka Samhita and Sushruta Samhita.

In Ayurvedic toxicology (Agadatantra), managing poisoning from animals, plants, or chemicals involves detoxifying the system, pacifying aggravated doshas, and restoring tissue integrity. The herbs in Eksara Gana are known for their broad spectrum of actions—detoxifying, anti-inflammatory, antimicrobial, hepatoprotective, and immunomodulatory. The necessity for safe, plant-based remedies in managing toxicity highlights the clinical relevance of this group today.

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Aims and Objectives:-

1. To analyze both the individual and combined pharmacological effects of the herbs comprising Eksara Gana
2. To examine their traditional uses in treating different types of poisoning.
3. To integrate classical Ayurvedic concepts with modern scientific evidence to support clinical applications.

Material and Methods:-

Studied and Material Collected from AyurvedaLitrature, Various Modern Texts,Research Articles

Constituents of Eksara Gana[2]

The following table summarizes the major herbs included in Eksara Gana along with their classical and modern attributes:

Sr No	name	Botanical Name	Rasa	Guna	Virya	Vipak
1	Bakuchi	Psoralea Corylifolia	Katu,Tikta	Laghu, Ruksha	Ushna	Katu
2	Katbhi	Careya Arborea	Katu	Laghu, Ruksh	Ushna	Katu
3	Sindhuvar	Vitex Negundo	Katu,Tikta	Laghu, Ruksha	Ushna	Katu
4	Choraka	Angelica Glauca	Katu,Tikta	Laghu, Ruksha	Ushna	Katu
5	Varuna	Crateva Nurvala	Tikta, kashaya	Laghu, Ruksha	Ushna	Katu
6	Kushtha	Saussurea Lappa	Tikta,Katu Madhur	Lagu,Ruksha Tikshna	Ushna	Katu
7	Sarpgandha	Rauwolfia Serpentina	Tikta	Ruksha	Ushna	Katu
8	Saptala	Euphorbia Tirucalli	Katu	Laghu,Tiksna	Ushna	Katu
9	Punarnava	Boerhavia Diffusa	Madhur,Tikta Kashay	Laghu,Ruksha	Ushna	Madhur
10	Shirisha	Albizia Lebbeck	Kashay,Tikta Madhur	Laghu,Ruksha Tikshna	Ushna	Katu
11	Araghvada	Cassia Fistula	Madhur	Guru,mrudu Snighdha	Sheet	Madhur
12	Arka	Calotropis Procera	Kstu,Tikta	Laghu,Ruksha Tikshna	Ushna	Katu
13	Shyama	Operculinaturpethum	Kashaya, Madhur	Ruksha	Ushna	Katu
14	Patha	Cissampelos pareira	Tikta	Laghu,Tikshna	Ushna	Katu
15	Vidang	Embelia Ribes	Katu,Kashay	Laghu,Ruksha Tikshna	Ushna	Katu
16	Amra	Mangifera Indica	Kashay	Laghu,Ruksha	Sheet	Katu
17	Ashmantak	Ficus Rumphii	Kashay	Laghu,Ruksha	Sheet	Katu
18	Kubrak	BarleriaPrionitis	Tikta,Madhur	Laghu	Ushna	Katu
19	Bhumi	---	---	---	---	---

Chemical constituents & pharmacological action of various dravyamentioned in eksaragana

Sr.No	Dravya	Chemical constituents	Pharmacological action
1	Bakuchi[3]	Coumarins Flavonoids Meroterpenes Benzofurans Dimers	Antibacterial and antifungal effects Antioxidant effects Anti-osteoporosis effects Regulation of estrogen levels Anti-tumor effects Anti-inflammatory effects

			Neuroprotective effects
2	Katbhi[4]	terpenoids flavonoids coumarins saponins tannins botulin betulinic triterpene ester beta-amyrin hexacosanoltaraxerol beta-sitosterol quercitin taraxeryl acetate α-spinasterol α-spinasterone sterols	Antitumor activity[5] Anti-inflammatory activity Antimicrobial activity antioxidant activities Anticonvulsant activity Antiulcer activity Analgesic activity Wound healing activity Hepatoprotective effect
3	Sindhuvar[6]	betulinic acid ursolic acid nishindaside protocatechuic acid mussaenosidic acids vitedoin vitexin oleanolic acid isovitexin casticin negundin-A negundin-B chryso-splenol Chrysophenol D Nishindine hydrocotyle	anti-inflammatory analgesic anti-oxidant anti-convulsive anti-bacterial anti-fungal cardio-protective anti-tumor anti-allergic hepatoprotective activities
4	Choraka[7]	LingustilideButylidinephthalide Octadecadionate Phyllen Hydrodistillation phellandrene Pinene trans-carveol caryophyllene oxide caryophyllene terpinene nerolidol bisabolene	Antioxidant activity Broncho relaxation Antimicrobial activity Antifungal activity Phytotoxic activity Anxiolytic activity
5	Varuna[8]	triperpenoids saponins flavonoids phytosterols alkaloids glucosilinates	Treatment of urinary disorders -Urolithiasis -Hyperoxaluria -Urinary tract infection Nephroprotective activity Hepatoprotective activity Anti-arthritic activity anti-inflammatory activity Cardioprotective activity

			Anti-protozoal activity Anti-diabetic activity
6	Kushtha[9]	Terpenes Anthraquinones Alkaloids Flavonoids costunolidedihydrocostunolide 12-methoxydihydrocostunolide dihydrocostus lactone dehydrocostus lactone α-hydroxydehydrocostus lactone β-hydroxydehydrocostus lactone lappadilactone mokko lactone betulinic acid cynaropicrin reynosin santamarine	Anticancer/antitumor activity Anti-inflammatory activity Hepatoprotective Anti-ulcer and cholagogic Angiogenesis effect Imunomodulator Anticonvulsant activity Gastro-protective effect Anti-hepatotoxic activity
7	Sarpgandha[10]	Reserpine Rescinnamine Despiridine Ajmaline Iso-Ajmaline rauwolfinine Serpentine alsotonine Ajmalinine Chandrine renoxidine Sarpagine Tetraphyllicine Yohimbine	anticholinergic hypotensive anticontractile sedative relaxant hyperthermic antidiuretic sympathomimetic hypnotic vasodialater antiemetic anti-fibrillar activity tranquilizing anti-arrhythmic antifungal
8	Saptala[11]	Euphol Tirucallol glut-5-en-3-b -ol cycloeuphordenol, euphorginol aamyrin lanosterol cycloartenol 12,20-Dideoxyphorbol-13 isobutyrate 12-deoxy-4 β-hydroxyphorbol-13-phynylacetate-20-acetate	Oxytoxic activity Antiarthritic activity Molluscicide activity Antimicrobial activity Antiherpetic activity Antioxidant Activity Hepatoprotective Activity Immunomodulatory activity Cytotoxic and Antiviral Activities
9	Punarnava[12]	Phenolicglycoside C-Methyl flavone Isoflavone Flavonol Flavonoidglycoside Phenolic acid Rotenoids Xanthone Lignan	Immunostimulatory Activity Anticancer Activity Antidiabetic and Hypoglycemic Activity Antifibrinolytic Activity Anti-Inflammatory Activity Diuretic and Renal Activity Hepatoprotective Activity Antimicrobial Activity

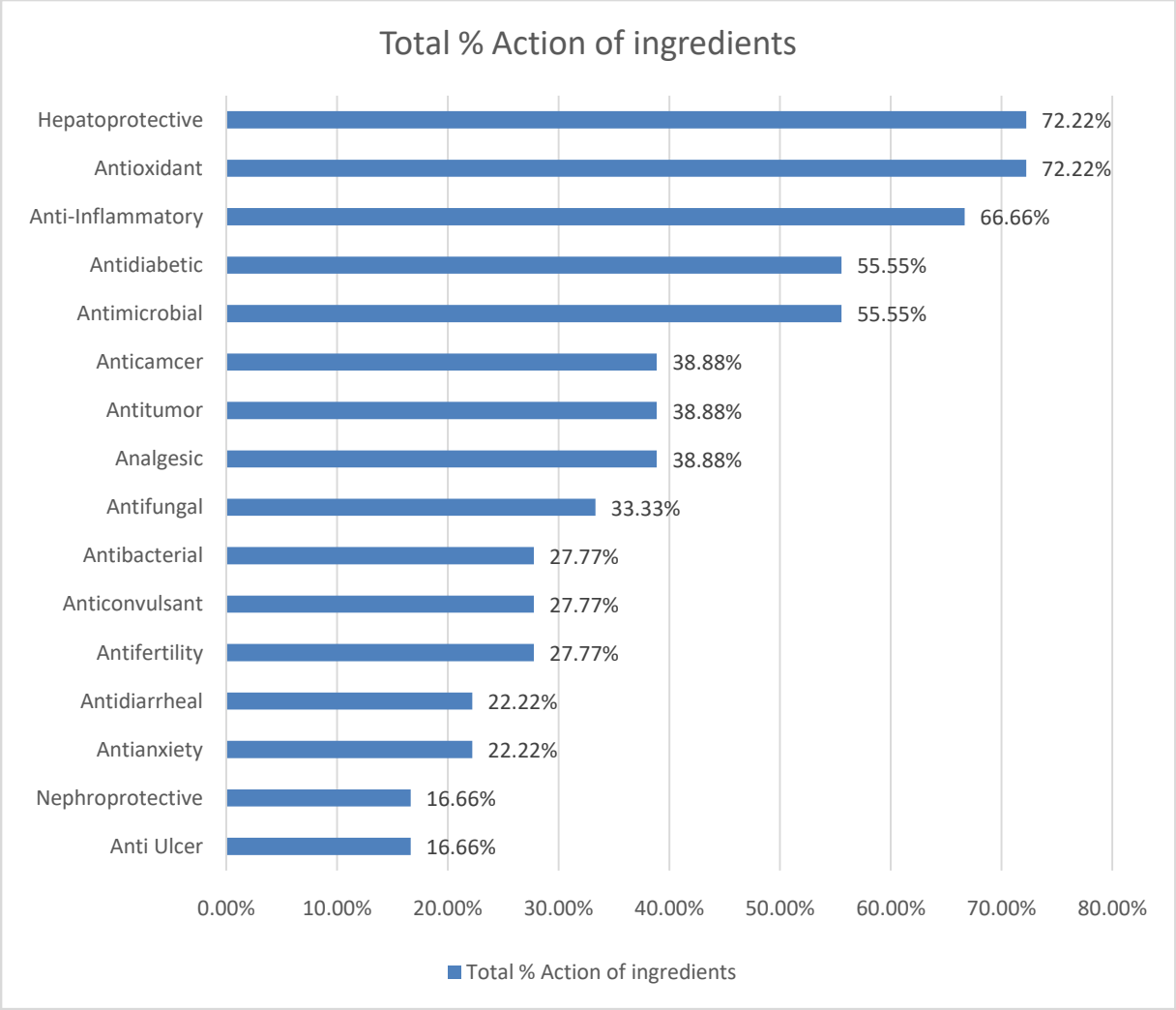
		Purine nucleoside Ecdysteroid	Antioxidant Activity Spasmolytic Activity Antiasthmatic Activity
10	Shirisha[13]	Flavonoids Saponins Alkaloids Phenolic Compounds Phytosterols Glycosides Tannins Terpenoids Triterpenes	Anti-oxidant activity Anti-asthmatic Activity Anti-histaminic activity Anti- tussive activity Anti-fertility Activity Anti- diarrheal Activity Antidiabetic Activity Anti-arthritis activity Allergic Conjunctivitis Analgesic Activity Anti-Inflammatory Activity Antibacterial Activity Nootropic and anxiolytic activity Antipyretic Activity
11	Araghvada[14]	Anthraquinones flavonoids flavan- 3-ol derivatives. Alkaloids terpenoids saponins tannin phlobatanin fistulic acid rhein rheinglucoside galactomannan sennosides	Antidiabetic Activity Hypolipidemic Activity Hepatoprotective Activity Antioxidant Activity Antipyretic Activity Anti-inflammatory Activity Antitussive activity Antilaishmanial activity CNS activity Antimicrobial Activit Antitumor activity Larvicidal and ovicidal activity Antiparasitic Activity Anti-itching activity Antiulcer activity
12	Arka[15]	Cardenolide proceragenin benzoylinesolone benzoylisolinelone calotropin calotropagenin calotropenyl acetate avenolthe uzarigenin terpenol ester triterpenoids calotropursenyl calotropternyl ester oleanene triterpenes cardenolides anthocyanins	Analgesic activity Antifertility activity Anti-tumor studies Anthelmintic activity Anti-hyperglycemic effect Hepatoprotective activity Inflammatory activity Anti-diarrhoeal activity Anticonvulsant effects Antimicrobial activity Oestrogenic functionality Antimalarial activity
13	Shyama[16]	Phenol Flavonoid Phytosterol Terpenoid cardiac glycosides saponins	Analgesic activity Anti-inflammatory activity anti-inflammatory effect Hepato-protective activity Anti-ulcer activity Anti-diabetic Activity

		lignin scopoleptin triterpenes etulinic acid botulin lupeol sitosterol glucose rhamnose	Anti-diarrhoeal Antispasmodic activity Bronchodilator activities Anti-microbial Activity Nephroprotective Activity
14	Patha[17]	isoquinoline alkaloids bisbenzylisoquinoline benzylisoquinoline tropoloisoquinoline aporphine azafluoranthene Hayatidine Hayatine Isochondrodendrine Tetrandrine Cycleanine Insularine Sepeerine	Anti-inflammatory activity Anti-diabetic Antifertility activity Anti-parasitic activities Gastro-protective activity Antioxidant activity Neuro-protective activity Chemopreventive Antivenom Analgesic and antipyretic activity Anti-cancerous Anti-anxiety Anti-microbial Anti-insecticide Antimalarial activity
15	Vidang[18]	Embelin Tannin Christembine phenolic acids caffeic acid vanillic acid chrorogenic acid cinnamic acid o-cumaric acid	Analgesic activety Anthelminthic activity Antianxiety activity Anti-bacterial activity Antinematodal activity Ascaricidal properties Anti-cancer activity Anticonvulsant activity Antidepressant activity Antifertility activity Antifungal activity Antimitotic activity Antioxidant property Cardio protective effect Wound healing property Anti-diabetic activity Antihyperglycemic activity Antihyperlipidemic activity Antihyperhomocysteinemic activity Antitumor activity anti-inflammatory activities Anti-obesity activity Hepatoprotective activity
16	Amra[19]	Polyphenols Terpenoids Carbohydrates Sterols Carotenoids phenolic acids xanthones benzophenones tannins terpenoids	Anticancer Activities Anti-Diabetic Activity Antioxidant Activities Antimicrobial Activities Hepatoprotective Properties Anti-Obesity and Lipid Lowering Activity Anti-Diarrheal Activity

		flavonoids	
17	Ashmantak[20]	Lavonoids Tannins Saponins Phenolicacids Terpenoids Quercetin Kaempferol gallic acid ellagic acid	Antimicrobial Activity Antioxidant Activity Anti-inflammatory Activity Antidiabetic Activity Anticancer Activity Hepatoprotective Activity Neuroprotective activity
18	Kubrak[21]	Alkaloid Flavonoids saponins terpenoids phytosterol phenolic compound tannin glycosides barlerinoside shanzhisidemethylester lupulinoside 7-methoxydiderroside barlerin acetylbarlerin verbascoside lupeol pipataline balarenone Melilotic acid syringic acid vanillic acid 6-hydroxyflavone scutellarin phytosterol	Antibacterial activity Antioxidant activity Antifungal activity Antidiabetic activity Antiviral activity Anthelmintic activity Antifertility activity Glutathione S-transferase, acetylcholinesterase inhibitory activity Anticataract activity Anticancer activity Anti-inflammatory activity Hepatoprotective activity Central nervous system (CNS) activity Antinociceptive activity Anti-arthritic activity Antihypertensive activity

Eksara Gana, as described in foundational Ayurvedic scriptures, consists of herbs known for their anti-toxic (Vishaghna) and anti-parasitic (Krimighna) actions. Notable among these are Shirisha (Albizia lebbeck), regarded as the foremost detoxifying herb, along with Punarnava (Boerhaviadiffusa), Vidanga (Embeliaribes), and Sarpagandha (Rauwolfia serpentina). Traditionally, these plants are employed in managing toxic conditions, parasitic infestations, inflammatory swellings (Shotha), and various skin disorders (Kustha). Recent scientific evaluations lend support to these classical claims. For instance, Shirisha has shown promising antihistamine and anti-allergic effects in laboratory studies. Punarnava is recognized for its ability to reduce swelling, protect liver function, and combat inflammation. Sarpagandha contains active alkaloids like reserpine, which contribute to its effectiveness in managing high blood pressure and calming the nervous system. Likewise, Vidanga has been validated for its worm-expelling and antioxidant potential. This alignment of ancient Ayurvedic wisdom with present-day scientific evidence illustrates the relevance of Eksara Gana in contemporary clinical settings, particularly for detoxification, infection-related ailments, and inflammatory conditions.

The ingredients exhibit a wide range of pharmacological actions. Among these, hepatoprotective and antioxidant effects are the most prominent, each observed in 72.22% of the ingredients. Anti-inflammatory activity is seen in 66.66%, followed by antimicrobial and antidiabetic effects in 55.55% of the ingredients. Antitumor, anticancer, and analgesic properties are present in 38.88%, while antifungal activity is noted in 33.33%. Additionally, antifertility, anticonvulsant, and antibacterial effects are found in 27.77% of the ingredients. Antidiarrheal and antianxiety actions are each seen in 22.22%, and nephroprotective and antiulcer activities are reported in 16.66% of the ingredients.



Discussion:-

Eksara Gana, as described in classical Ayurvedic texts, comprises a unique group of herbs renowned for their Vishaghna (anti-toxic) potential. The eighteen herbs in this Gana—such as Bakuchi, Shirisha, Shyama, Arka, Punarnava, and others—collectively represent a holistic therapeutic approach to neutralizing toxins, restoring doshic balance, and protecting vital organs from toxin-induced damage.

One of the cornerstone drugs in the group, Shirisha (Albizia lebbeck), is considered Vishaghna Shreshtha (the foremost among anti-poisonous herbs). Its bark and seeds contain saponins and flavonoids with proven antihistaminic, anti-inflammatory, and immunomodulatory properties. Shyama (Operculinaturpethum) functions as a powerful purgative, useful in expelling ingested toxins through virechana. Punarnava (Boerhaviadiffusa), with its diuretic and nephroprotective actions, aids in systemic detoxification, especially through renal elimination.

Bakuchi (Psoralea corylifolia) and Vidanga (Embeliaribes) contribute antimicrobial, anthelmintic, and immunostimulant effects, helping the body resist infection and secondary complications post-toxin exposure. Aragvadha (Cassia fistula) and Patha (Cissampelos pareira) enhance detoxification through their mild laxative and digestive stimulant properties. Saussurealappa (Kushtha) and Rauvolfia serpentina (Sarpagandha) offer valuable properties such as anti-inflammatory, calming, and heart-protective effects, making them particularly beneficial in managing neurotoxic and venom-related conditions.

From a pharmacological perspective, the herbs in Eksara Gana contain a variety of bioactive compounds, such as alkaloids (reserpine from Sarpagandha), flavonoids (quercetin, kaempferol), glycosides, and terpenoids, each contributing to antioxidant, hepatoprotective, anti-inflammatory, and adaptogenic activities. These effects are crucial not only for neutralizing toxins but also for repairing tissue damage and restoring homeostasis.

The synergy of these herbs addresses multiple levels of toxicity—whether gastrointestinal, respiratory, dermatological, or neurological. For instance, Arka (Calotropis Procera) and Katabhi have been traditionally used to counter venom and insect bites, while Amra (Mangifera indica) and Ashmantaka contribute to wound healing and skin purification.

Modern studies on selected members of Eksara Gana have validated their traditional use. For example, Albizia lebbeck and Boerhaviadiffusa have shown significant hepatoprotective and immunomodulatory activities in experimental models. However, comprehensive research is still needed to establish standard formulations, effective dosages, and potential interactions.

In conclusion, Eksara Gana reflects a well-balanced and purposeful assembly of herbal agents aimed at holistic detoxification and healing. Its continued relevance in contemporary medicine lies in its potential to serve as a safe, natural alternative or adjunct to modern toxicology treatments, especially in resource-limited or integrative healthcare settings.

Conclusion:-

Eksara Gana, as outlined in classical Ayurvedic literature, represents a well-formulated group of medicinal herbs with potent anti-toxic properties. The integration of herbs like Shirisha, Bakuchi, Punarnava, Shyama, and others contributes to a multi-dimensional therapeutic approach targeting the neutralization and elimination of toxins from the body. Their actions extend beyond detoxification, encompassing immunomodulation, hepatoprotection, anti-inflammatory effects, and tissue repair.

The synergy among these herbs provides broad-spectrum efficacy in various types of poisoning, including environmental, dietary, and venom-induced toxicities. The diverse phytoconstituents present in these drugs—such as alkaloids, flavonoids, and terpenoids—play a crucial role in supporting the body's physiological resilience and recovery.

Given the growing interest in plant-based and integrative medicine, Eksara Gana holds significant potential for application in modern healthcare, especially in the context of natural detoxification and supportive therapy. Further scientific validation through pharmacological and clinical research is warranted to fully establish its therapeutic scope and optimize its usage in contemporary practice.

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