Review Article

A Review on the Pashanbheda Plant "*Aerva javanica*"

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ABSTRACT

Medicinal plants may serve as a vital source of potentially useful new compounds for the development of effective therapy to combat a variety of kidney problems. Many herbs have been prove to be effectual as nephroprotective agents while many more are claimed to be nephroprotective but there is lack of any such scientific evidence to support such claims. Developing a satisfactory herbal therapy to treat severe renal disorders requires systematic investigation of properties like acute renal failure, nephritic syndrome and chronic interstitial nephritis. Herbal medicines possess curative properties due to the presence of their chemical components. The present review is aim to elucidate the one of the Pasanabheda category plant, *Aerva javanica* possessing nephroprotective activity. The present review includes ethnomedicinal, pharmacognostical, phytochemical and different pharmacological activity of the plant *Aerva javanica.*

Keywords: *Aerva javanica*, Pashanbheda.

INTRODUCTION

Nephrotoxicity is one of the most common kidney problems and occurs when body is exposed to a drug or toxin.[1] A number of therapeutic agents can adversely affect the kidney resulting in acute renal failure, chronic interstitial nephritis and nephritic syndrome because there is an increasing number of potent therapeutic drugs like amino glycoside antibiotics, chemotherapeutic agents and NSAIDS.[2] Exposure to chemical reagents like ethylene glycol, carbon tetrachloride, sodium oxalate and heavy metals such as lead, mercury, cadmium and arsenic also induces nephrotoxicity. Prompt recognition of the disease and cessation of responsible drugs are usually the only necessary therapy.[3] Nephroprotective agents are the substances, which possess protective activity against Nephrotoxicity. Medicinal plants have curative properties due to the presence of various complex chemical substances. Early literatures have prescribed various herbs for the cure of renal disorders. Co-administration of various medicinal plants possessing nephroprotective activity along with different nephrotoxic agents, which may attenuate its toxicity. The term renal failure primarily denotes failure of the excretory function of kidney, leading to retention of nitrogenous waste products of metabolism in the blood.[4] In addition to this, there is a failure of regulation of fluid and electrolyte balance along with endocrine dysfunction. The renal failure is fundamentally categorized into acute and chronic renal failure.[5] Acute renal failure (ARF) refers to the sudden and usually reversible loss of renal function, which develops over a period of days or weeks. There are many causes for ARF, which includes acute tubular necrosis that commonly accounts for 85% of incidence. Mostly acute tubular necrosis occurs due to either ischemia or toxins. The toxins may be exogenous or endogenous. The exogenous agents are radio contrast agents, cyclosporine, antibiotics, chemotherapeutic agents, organic solvents, acetaminophen and illegal abortifacients.[5] Chronic renal failure (CRF) is an irreversible deterioration in the renal function, which classically develops over a period of years, leading to loss of excretory metabolic and endocrine functions. Various causes of renal failure has been recognized like hypertension, diabetes mellitus, antineoplastic agents like cyclophosphamide, vincristine, cisplatin etc.[4]

Ancient literature has prescribed various herbs for the cure of kidney disease. The term "Pasanabheda" has been cited in the literature to identify the group of plants, which extensively used in the indigenous system of medicine to dissolve urinary calculi and stones like *Coleus aromaticus, Aerva lanata, Aerva javanica, Rotula aquatica, Kalanchoe pinnata, Ocimum basilicum.*

The present review is about the one of the Pasanabheda category plant, *Aerva javanica* possessing nephroprotective activity. The plant *Aerva javanica* belonging to the family *Amaranthaceae* is a tall and woolly under shrub found plentiful in rainy season. This plant is used as Pasanabheda means one, which breaks the kidney stone.[6] Therefore, in Gujarati it is commonly known as Patharphod. Roots and flowers are reported to possess medicinal properties against rheumatism and kidney troubles.[7]

The plant *Aerva javanica* belonging to the family *Amaranthaceae* is a tall and woolly undershrub found plentiful in rainy season in Bhavnagar district of Gujarat state in India. Any drug used as Pasanabheda means which breaks the kidney stone.[6] Roots and flowers of *Aerva javanica* are reported to possess medicinal properties against rheumatism and kidney troubles.[7]

Aerva javanica is reported as anthelmintic, diuretic, demulcent. It is used for the treatment of headache.[8] The decoction of the plant is administered to remove swellings.[9]

➢ **Taxonomic classification** [10]

- **Division**: Magnoliophyta
- **Class**: Dicotyledonae
- **Subclass**: Monochlamydeae
- **Series**: Curvembryeae
- **Family**: Amaranthaceae
- **Genus**: *Aerva* (Forsk.)
- **Species**: *javanica* (Burm.f.)

✓ **Floral Formula**

Male flower- Br, brl, ♂, P_5, A_5, G_0 **Female flower** Br, brl, ♀, P_5, A_0, $\underline{G}_{(2)}$

✓ **Floral Diagram** [10]

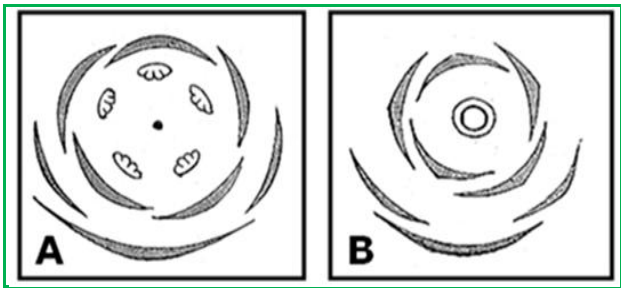

Figure 1: Floral diagram of male flower (A) and female flower (B)

➢ ***Aerva javanica***

✓ **Vernacular names**

Sanskrit	-	Astmabayda
Hindi	-	Patharphori
Gujarati	-	Patharphod, Bur
English	-	Desert cotton, Javanese wool plant

✓ **Synonyms** [11]

Aerva tomentosa Forsk.

Aerva persica (Burm.f.) Merrill

✓ **Geographical source**

Distribution

India, Burma, Baluchistan, Sind, Deccan, Egypt, Arabia, tropical Africa, Cape Verde Islands.[9]

Wildly distributed in Gujarat, Saurashtra and kachchh.

Family: Amaranthaceae

- Opposite or alternate exstipulate leaves
- Flowers small, haplochlamydous, usually hermaphrodite and actinomorphic
- Tepals 4 or 5, usually sepaloid
- Stamens 1-5, anteposed
- Gynoecium 2-3 carpellary, syncarpous, superior, unilocular with indefinite to one ovule.

Genus: *Aerva* (Forsk.)

Species: *javanica* (Burm.f.) [12]

Figure 1: *Aerva javanica* undershrub

✓ **Morphology of *Aerva javanica* plant** [9]

- **Habit**: - A perennial, suffruticose, hoary-tomentose, erect to scandent dioecious conspicuous under shrub, 0.6- 1 m tall found almost throughout plains of India.
- **Stem**: - terete, much branched, as thick as goose-quill, covered with a thick, easily detachable stellate tomentum, woolly at the base, herbaceous above, tomentose.
- **Leaves**: - simple, alternate, variable, 2.5-6.3 cm. by 3-16 mm., sessile or sub sessile, **shape-**linear-oblong or oblong-spathulate, **base**- cuneate to attenuate, **apex-** obtusely apiculate, **margin-** entire, densely tomentose pale-white; petiole 0.5-1 cm hairy.
- **Inflorescence**: - stalked, spikes 2.5-18 cm long, white, woolly, elongate, linear or oblong; often forming leafless terminal paniculate up to 5 cm.
- **Flowers**: - Unisexual, dense, usually dioecious, dull white, sessile
- **Bracts and bracteoles: -** Broadly ovate, white, 3 mm long, apex acute, hyaline.
- **Male flowers**: seems to be very rare, perianth rather more than 1.5 mm. long, elliptic-oblong, sub obtuse, wooly at the back.
- **Female flowers**: Tepals 5, perianth 2.5 mm long, obovate-oblanceolate or spathulate, base sub acute, apex apiculate, tomentose without; outer 2 larger with ceasing midrib below the apex, inner 3 smaller with thick green midrib. filaments reduced, anthers absent

- **Ovary**: - 0.5 mm, style 1.8 mm, stigma deeply forked, as long as style.
- **Fruit**: - Utricle orbicular-ovoid, very thin.
- **Seed**: - Minute with 0.85 mm. diameter, ovoid, lenticular with brown-black shining.
- **Flowering period**: - July-September

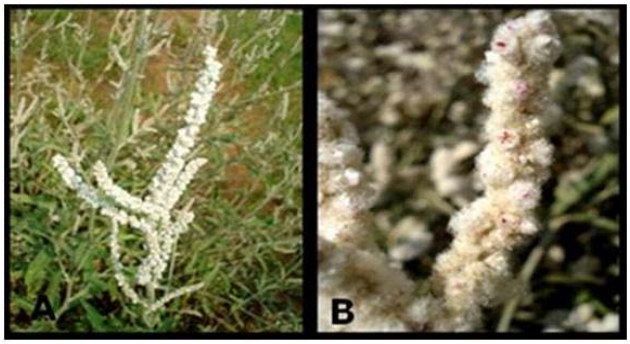

Figure 2: Inflorescence (A) and Flower (B) of *Aerva javanica*

✓ **Traditional use of plant parts**

- **Leaves: -** Antifungal, Antimicrobial, Nematicidal, used in jaundice, urinary trouble.[13]
- **Stem and Flower: -** Antifungal, Antimicrobial.[14]
- **Root: -** Diuretic, used in urinary trouble.[15]
- **Seed: -** Used in rheumatism.[16]

Plant Review

✓ **Ethnomedicinal Review**

- Payal Chawla has reported approximately 28 species of *Aerva* genus and reported that *Aerva* plants are used to cure ulcer, lithiasis, dropsical affections, eye affection, toothache, headache, in disorders of abdomen and inflammation of internal organs. Roots and flowers are reported to possess hypoglycaemic, antioxidant, anthelmintic, analgesic, antimalarial, antivenin activities and medicinal properties against rheumatism and kidney troubles.[17]
- Bhasker punjani has reported that alcoholic extract of leaf of *Aerva javanica* given orally twice a day for 10 days to cure urinary disorders. This plant is diuretic, useful in strangury.[18]
- Roots and flowers are reported to possess medicinal properties against rheumatism and kidney troubles.[7]
- Plant reported as anthelmintic, diuretic, demulcent. It is used for the treatment of headache.[8]
- The decoction of the plant is administered to remove swellings.[9]

✓ **Pharmacognostical Review**

- Hussien alwadie has studied morphological characteristics of four species (*Aerva javanica, A. lanata, Pupalia lappaceae* and *Achyranthes aspera*) representing three genera of the family *Amaranthaceae* and their distribution in relation to some environmental parameters.[19]
- Pharmacognostical studies on aerial parts of *Aerva javanica* revealed the presence of branched trichome, rosette type calcium oxalate crystals in lamina and midrib of leaf, anomocytic stomata and anomalous growth in transverse section of the stem.[20]
- Pharmacognosical studies on roots of *Aerva javanica* revealed the presence of cork, phellogen and phelloderm in the periderm with stellar region in the root. In the crude powder structures mainly observed were cork, fibre, calcium oxalate crystals, vessels with bordered pits and ray cells.[21]

✓ **Phytochemical Review**

- Muhammad samejo has estimated essential oils from leaves and stems of *Aerva javanica* extracted through dry steam distillation and the chemical composition of the oil determined by Gas Chromatography-Mass Spectrometry (GC-MS). The essential oil of *Aerva javanica* leaves was found to be rich in hentriacontane (21.48%), nonacosane (20.59%), heptacosane (19.78%), pentacosane (5.58%), octacosane (3.47%), triacontane (2.81%) and hexacosane (2.04%), whereas the essential oil of stems was determined to be rich in nonacosane (23.26%), heptacosane (22.48%), hentriacontane (18.32%), octacosane (3.42%), triacontane (2.24%) and squalene (2.07%).[22]
- Abdul wajid Khan has performed Phytochemical analysis and revealed the presence of three compounds, 3-hydroxy-4 methoxybenzaldehyde, ursolic acid and (E)-N-(4-hydroxy-3-methoxyphenethyl)-3-(4-hydroxy-3-ethoxyphenyl) acryl amide.[23]
- Nabiel has performed isolation of new flavonol, isorhamnetin 3-0-β [4''-p-coumaroyl-a-rhamnosyl (1→6) galactoside], has been isolated from *Aerva javanica* along with it's an acylated derivative, its kaempferol analogue and various common kaempferol, quercetin and isorhamnetin glycosides.[24]
- *Aerva persica* burm.f. contains kaempferol, sterol, triterpenes, flavonoids, ß-sitosterol, α-amyrin, palmitic acid, stearic acid, linoleic acid, myristic, oleic acid, palmitic acid, aervanone, alkaloids, Chrysin-7-O-galactosidem.[25]
- Various chemical constituents including steroids, triterpenes, lipids, flavonoids, tannins, saponins, alkaloids, sulphates, carbohydrates and glycosides have been isolated from this plant.[26]
- Four new ecdysteroids (1-4), along with three known steroids, β-ecdysone (5), 5-β-2-deoxyintegristerone A (6) and 24-epi-makisterone A (7), were isolated from

the methanolic ext. of the flowers of Aerva javanica by using normal and reverse phase chromatog. All isolates were evaluated for their inhibitory activities against the enzymes acetylcholinesterase (AChE), butyryl-cholinesterase (BChE) and lipoxygenase (LOX).[27]

- Chemical composition of *Aerva javanica* seed essential oils obtained by hydro distillation (HD) and dry steam distillation (SD) extracting methods and analyzed by using gas chromatog.-mass spectrometry(GC-MS).[28]
- Chromatographic purification of ethyl acetate soluble fraction of the methanolic extract of the flowers of *Aerva javanica* yielded three new acylated flavone glycosides: kaempferol – 3–O–β–D-[4'''-E-p-coumaroyl-α–L- rhamnosyl (1→6)] - galactoside, kaempferol-3-O-β-D-[4'''-E-p-coumaroyl-α-L-rhamnosyl(1→6)]-(3''-E-p-coumaroyl) galactoside and kaempferol-3-O-β-D-[4'''-E-pcoumaroyl-α -L-rhamnosyl(1 →6)]-(4''-E-p-coumaroyl) galactoside.[29]
- A new, economic and rapid high performance thin-layer chromatography method developed for alcoholic extract of root of *Aerva javanica*. The minimum detectable amount of quercetin found to be 0.02196% w/w.[30]
- There are approximately 28 species of *Aerva* genus, but only a few species are medicinal of which *A. persica, A. lanata* and *A. javanica* are of great value. Roots and flowers are reported to possess hypoglycemic, antioxidant, anthelmintic, analgesic, antimalarial, antivenin activities and medicinal properties against rheumatism and kidney troubles.[17]
- Lupeol, mixture of myristic, palmitic, stearic and oleic acid esters, β-amyrin, β-sitosterol, betulinic acid, phytol, quercetin, quercetin-3-O-rutinoside, quercetin-3-O-xylosyl(1→2) rhamnoside and shikimic acid were isolated from the *Aerva javanica*.[31]
- The saponin contents in *Aerva lanata* (L.) Juss ex. Schult and *Aerva javanica* (Burm. fil) were investigated in Egypt. Three glycosides were isolated. Hydrolysis of glycoside I afforded β-sitosterol and glucose, and saponin glycoside II yielded lupeol, galactose and glucose. Saponin glucoside III gave oleanolic acid, galactose, glucose and rhamnose.[32]
- Qualitative and quantitative analysis of carbohydrates were carried out in the aerial parts of *A. lanata* and *A. javanica* by applying PC, GLC and gel filtration method in Egypt. In these species, free arabinose, rhamnose, xylose, galactose, glucose, mannose and mannitol were revealed, but in variable amounts Mannitol (4.2% in *A. lanata* and 2.2% in *A. javanica*) was isolated. Polysaccharides proved of pectic nature (4.8% in *A. lanata* and 3.25% in *A. javanica*) and afforded 4 fractions in *A. lanata* and 3 fractions in *A. javanica* on gel filtration on Sephadex G-100. *A. lanata* polysaccharide exhibited more remarkable hypoglycemic activity than that of *A. javanica*.[33]
- The investigation of the alkaloidal content of the two *Aerva* species growing in Egypt, namely *Aerva javanica* (Burm, Fil) and *Aerva lanata* L. Juss. ex. shult, family Amaranthaceae, revealed the presence of 10-methoxy-canthin-6-one (Methyl aervin) and 10-hydroxy-canthin-6-one (aervin) in the two species, while canthin-6-one was only isolated from *A. lanata*. This study represents the first isolation of 10-methoxy-canthin-6-one and 10-hydroxy-canthin-6-one from *A. javanica*.[34]
- The Ethyl acetate extract of the fresh leaves of *A. javanica* yielded a compound which was identified as β-sitosterol glucoside.[35]
- Hentriacontane, nonacosane, nonacosanol, tritriacontane, tetratriacontane, sitosterol, and oleanolic acid were isolated from the ethyl acetate extract of fresh leaves of *A. javanica*.[36]
- Several known glycosides of kaempferol were isolated from the leaves of Clitoria ternatea and whole plants of Aerva javanica. Aerva lanata (whole plant) afforded β-sitosteryl palmitate, besides α-amyrin and β-sitosterol.[37]

✓ **Pharmacological Review**

- Srinivas has made crude extracts of different parts of *Aerva javanica* with hexane, chloroform and methanol. Methanolic extract of flower and leaf have shown a wide range of phytochemicals and more anti-bacterial activity. HPTLC separation of extract coupled with bioautography studies revealed that apigenin followed by rutin and kaempferol has shown anti-bacterial activity against more number of bacteria.[38]
- Abdul wajid khan has performed phytochemical analysis and Enzyme Inhibition Assay of *Aerva javanica.* Inhibition of urease activity of various fractions revealed that ethyl acetate fraction showed significant activity ($P < 0.05$) as compared to other fractions. (*E*)-*N*-(4-hydroxy-3- methoxyphenethyl)-3-(4-hydroxy-3-ethoxyphenyl) acryl amide showed marked anti ulcer activity ($P < 0.05$).[23]
- Farees ud din mufti has evaluated various extracts by using methanol, n-hexane, chloroform, ethyl acetate and aqueous fraction of *Aerva javanica* and *Paeonia emodi* for antibacterial activity against *Escherichia coli* (NCTC 10418), *Klebsiella pneumoniae* (ATCC 700603), *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Salmonella typhi, Staphylococcus epidermidis* (NCTC 11047) and *Methicillin Resistant Staphylococcus Aureus* (MRSA) (NCTC 13143) and antifungal activity against *Aspergillus flavus, Aspergillus fumigatus, Aspergillus niger* and *Fusarium solani*.[39]

- Nongyao sawangjaroen and kitja sawangjaroen have evaluated that dichloromethane and methanol extracts from the *Brucea javanica* seed and a methanol extract from *Quercus infectoria* nut gall showed the highest anti-diarrheic activity.[40]
- Zahid farooq has conducted study on different plants including *Aerva javanica* to determine the ethno veterinary medicinal (EVM) practices for the treatment of different parasitic diseases of livestock in Cholistan desert, Pakistan.[41]
- *A. javanica* also showed antiviral,[42] antiplasmodial[43] and antidiabetic activities.[44]
- Six natural products were isolated from the whole plant of *Aerva javanica* and were tested for their antimicrobial activity along with different crude extracts (n-hexane, chloroform,ethyl acetate, methanol and water) which displayed moderate to weak inhibitory activity.[45]
- *Aerva* species, *Aerva lanata* and *Aerva javanica* were screened separately for their anti-diarrhoeal activity. The results illustrate that the ethanolic and aqueous extracts of *A. lanata* and the ethanolic and aqueous extracts of *A. javanica* have significant antidiarrhoeal activity and the activity may be attributed to its effect on intestinal transit.[46]
- The Ethyl acetate extract showed significant antimicrobial activity against G -ve bacteria, yeast and fungi while the isolated flavonoidal compounds. isorhamnetin 3-Orutinoside and chrysoeriol showed marked activity against G –ve bacteria. On the other hand, the fatty acids mixture showed great activity against G -ve and G +ve bacteria, while the fatty alcs. showed significant activity against G +ve bacteria.[47]
- Treatment of bean plants with hexane and ethanol extracts of *Artemisia monosperma* and chloroform extract of *Aerva javanica* have an adverse effect on the biological aspects *of Aphis craccivora* and was more pronounced in *A. monosperma* than *A. javanica*.[48]
- Phytochemical screening of the aerial parts of *Aerva lanata* L. Juss ex. Schult *and Aerva javanica* (Burm. fil) Spring, (Amaranthaceae) growing in Egypt revealed the presence of carbohydrates and/or glycosides, tannins, saponins, alkaloids and/or nitrogenous bases, unsaturated sterols and/or triterpenes and flavonoids in both species. The aqueous extracts of the two species exhibited smooth muscle relaxant effect in a dose dependent manner as well as a significant antispasmodic activity.[49]
- The nephroprotective activity of aqueous extract of root of *Aerva javanica* at the dose level 200 mg/kg and 400 mg/kg bodyweight reported by Movaliya V. *et al.* 400mg/kg body weight dose of aqueous extract showed better result compared to negative control as well as 200 mg/kg body weight dose.[50]
- The alcoholic and aqueous extract of root of *Aerva javanica* checked for its nephro-protective effect by Movaliya V. and Zaveri M.[51]
- Movaliya V. and Zaveri M. evaluated the nephro-protective effect of different fractions of alcoholic extract of root of *Aerva javanica*. The hexane fraction of alcoholic extract of root of *Aerva javanica* showed significant effect compared to other fractions as well as negative control.[52]

✓ **Miscellaneous Review**

- Soliman has performed Cytogenetical studies on *Aerva javanica*. Cytogenetical characters of *A. javanica* according to chromosomal numbers, SEM indumentums and seed coat sculpture characters were studied.[53]
- Hussain has performed study to assess the nutritional value and mineral contents of four medicinal plants viz., *Aerva javanica* Burm.f, *Calotropis procera* Ait. f, *Datura alba* Nees, and *Nepeta suavis* Stapf., which are traditionally used as medicine in the Northwest Pakistan. Proximate analysis of plant sample determines that protein (21.353%) and ash (18.803%) was highest in *Datura alba*, carbohydrate (70.123 %) in *Aerva javanica*, energy (398.496 Kcal/100g), fats (12.595%) and fiber (40.150%) was highest in *Nepeta suavis*, while highest moisture (11.255%) was reported in *Calotropis procera.*[54]
- Tailings, soils and wild plants (*Acia Raddiena* and *Aerva Javanica*) were sampled from gold mine, at Allaqi Wadi Aswan, Egypt and analyzed for toxic metals (Hg, Cd, Pb and As) and associated heavy metals (Cr, Ag, Ni, Au, Mo, Zn, Mn and Cu) using ICP-MS, ICPAES, CVAAS and FAAS techniques. The present work concerns the distribution and mobility of these metals from tailing to the surrounding soils and wild flora. The results reveal that Cr, Cu, Zn, Ni, Ag, Au, Mn, Hg, As, Ag, Au and Pb in soil decreased as far away from the tailing, after then irregular trends as a result of input from surrounding rocks. Acia *Raddiena* plant accumulated As, Cd and Pb in higher levels than *Aerva Javanica*.[55]
- The effect of air pollution on the amino acid content of plants growing in Karachi area was studied. High amino acid contents were observed in *Aerva javanica, Alstonia scholaris, Cassia holosericea, Ficus benghalensis, F. religiosa, Guaiacum officinale, Mangifera indica, Murraya paniculata, Nerium oleander, Polyalthia longifolia, Prosopis juliflora, Samanea saman, and Trachelospermum lucidum* growing at Gurumandir and Cement Factory areas as compared to those growing at Karachi University Campus. Eucalyptus and *Prosopis glandulosa* showed a minimum difference in amino acid content suggesting some mechanism of resistant against pollution.[56]

- Outbeaks of small round-structured viruses have been associated with contaminated drinking water and food. Samples were collected from three wastewater treatment plants in Cairo. The collected samples were concentrated and detoxified. All concentrated samples were inoculated in three cell culture types, Vero, BS-C-1, and Huh-7 cells. To enhance virus isolation and propagation, the cells were treated for 2hr at 37°C with 40 mg of the water extract of *Aerva Javanica* (Burm.F.), Juss.Ex Schult plant. The main conclusion of this study is that SRSVs may be isolated by propagation in cell cultures previously treated with the water ext. of Aerva Javanica plant, which facilitate this propagation.[57]
- A new and distinct *Aerva javanica* plant with a tall stem and light grey-green leaves suitable for cut flower production.[58]
- The study assesses the plant communities and environmental factors that govern species, abundance and distribution in Taif area, western Saudi Arabia, using TWINSPAN analysis. Twenty three vegetation groups were identified visual, seven groups dominated by *Aerva lanata, Pergularia tomentosa, Arnebia hispidissima, Salsola spinescens, Capparis decidua, Aizoon canariense* and *Blepharis ciliaris* in the sand plains, *Calotropis procera, Dipterygium glaucum, Bassia muricata, Haloxylon scoparium, Aerva javanica, Anthemis melompodina* and *Coccinea grandis* in the valleys.[59]
- A number of water samples (24) were collected from wells, water pumps, natural and artificial depressions from Naukot, Vajuto, Mithi, Islamkot, Virawah and Nagarparkar area and analyzed on the site and at the laboratories for 18 different parameters. There was a wide variation in water quality and total dissolved solids. The highest values were observed at Virawah area and lowest at an artificial depression of rainwater within Nagarparkar town. The higher vegetation of Thar region consists mainly of thorny or prickly shrubs and perennial herbs capable of drought resistance as *Calligonum polygonoides, Aerva javanica, Salvadora oleoides, Acacia Senegal, Capparis decidua, Tamarix aphylla, Prosopis spicigera, Leptadenia pyrotechnica* and *Zizyphus nummularia*.[60]

CONCLUSION

Hence, it can be concluded that, the present review is about the one of the Pasanabheda category plant, *Aerva javanica* belonging to the *Amaranthaceae* family, possessing nephroprotective activity. Ethnomedicinally, this plant is used as Pasanabheda means one, which breaks the kidney stone. Roots and flowers are reported to possess medicinal properties against rheumatism and kidney troubles. This review article provides the phytoconstituents isolated from various parts of *Aerva javanica,* which may be helpful in bioinformatics to design novel drug against various diseases. So, there is good scope to investigate and characterize active phytocostituents, their mode of action and the effective dose of plant extracts for development of poly-herbal formulation. Therefore, the information summarized in this review is intended to serve as reference to many researchers. There is enormous scope for the future research to be carried on *Aerva javanica* considering its wide pharmacological profile.

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