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REVIEW ON MEDICINAL PLANTS WITH ANTI ASTHMATIC ACIVITY

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ABSTRACT

Asthma, a chronic disease is characterized by airway obstruction and inflammation. Though numerous synthetic drugs are used to treat asthma, they provide only symptomatic relief and not devoid of adverse effects. Traditional herbs from time immemorable, has been used to ameliorate many ailments and this review is about herbs with anti-asthmatic potential.

KEYWORDS: Anti-asthmatic. Herbs, Screening.

Asthma, a chronic disease is characterized by airway obstruction and inflammation. Though numerous synthetic drugs are used to treat asthma, they provide only symptomatic relief and not devoid of adverse effects. Traditional herbs from time immemorable, has been used to treat many ailments and this review is about herbs with anti-asthmatic potential.

Table 1: Medicinal Plants Exhibiting Anti Asthmatic Activity.

No	Name of the plant, family and parts used	Phytoconstituent	Anti-asthmatic screening methods
1.	*Acyranthes aspera* (Amaranthaceae) Whole plant parts	Protein, glycosides, alkaloids, tannins, phenolic compound, steroid, saponin glycosides, reducing sugar.	Goat tracheal chain and guinea pig ileum preparation, Histamine induced bronchoconstriction, Passive paw anaphylaxis.[1]
2.	*Aerva lanta* linn (Amaranthaceae) Aerial parts	Alkaloids - canthin-6-one alkaloids, flavonoids - quercetin, isohamnetin, flavanone, glycosides	Isolated goat tracheal chain model, clonidine induced catalepsy in mice, mast cell degranulation in mice.[2]
3.	*Ageratum conyzoides* (Asteraceae) Leaves	Flavanoids, alkaloids, steroids, terpenoids.	Clonidine and haloperidol induced catalepsy in mice.[3]

4.	*Ailanthus excels* (Simaroubaceae) Leaves	Flavonoids, terpenoids, saponins, quassonoids, alkaloids and steroids.	Clonidine induced catalepsy in mice, Milk-induced leucocytosis in mice, Passive paw anaphylaxis in rats, Clonidine induced mast cell degranulation in rats, Histamine induced contraction in goat tracheal chain preparation.[4]
5.	*Amburana cearensis* (Fabaceae) Trunk barks	Flavonoid isokaempferide	Kcl induced contraction on guinea pig trachea.[5]
6.	*Argemone mexicana* (papaveraceae) Stem	Alkaloids, amino acids, phenolic and fatty acids	Milk induced leucocytosis and milk induced eosinophilia.[6]
7.	*Asystasia gangetica* (Acanthaceae) Leaves	Alkaloids, tannins, steroidal aglycones, saponins, flavonoids, reducing sugars, and triterpenoids.	Guinea pig tracheal chain praparation, egg albumin- induced acute inflammation.[7]
8.	*Azadirachata indica* (Meliaceae) Branches	Alkaloids, reducing sugars, flavanoids, glycosides, tannins, saponins, and phenolic compound	Isolated goat tracheal chain preparation, passive paw anaphylaxis in rats.[8]
9.	*Bacopa monnieri* (Scrophulariaceae) Leaves	Saponins, alkaloids, sapogenin, D-mannitol, potassium salts	Mast cell degranulation.[9]
10.	*Cassia sophera* (Caesalpiniaceae) Leaves	Flavanoids, Anthraquinone glycosides	Histamine induced bronchoconstriction, clonidine and haloperidol induced catalepsy, milk induced leukocytosis and eosinophilia in mice and pasive paw naphylaxis.[10]
11.	*Casuarina equisetifolia* linn (Casuarinaceae) Wood and bark	Alkaloids, glycosides, tannis, steroids.	Isolated goat tracheal chain preparation and clonidine induced catalepsy in mice and clonidine induced mast cell degranulation in rat[11]
12.	*Clerodendrum serratum* (Verbenaceae) Roots	Glycosides, saponins, sterols, flavanoids.	Goat tracheal chain preparation, clonidine induced catalepsy, milk induced leucocytosis, eosinophilia in mice.[12]
13.	*Clitoria ternatea* (Fabaceae) Roots	Steroids, saponin, flavonoids, glycosides.	Milk induced leukocytosis and eosinophilia in mice,egg albumin induced mast cell degranulation in rats, passive paw cutaneous anaphylaxis in rat.[13]
14.	*Cnidium monnieri* (Umbelliferae) Fruits	Osthal	Passive cutaneous anaphylaxis in rats.[14]
15.	*Crinum glaucum* (Amaryllidaceae) Aerial parts	Alkaloids, lycorine, ambelline.	Protecting degranulation of mast cell, dye leakage in passive cutaneous anaphylactic reaction and histamine induced bronchoconstriction in the guinea pig.[15]
16.	*Curculigo orchioides* (Amaryllidaceae) Rhizomes	Phenolic compounds, flavanoids, tannins, glycosides, alkaloids, saponins and carbohydrates	Isolated goat tracheal chain preparation, Isolated guinea pig ileum preparation, Histamine induced bronchoconstriction in guinea pig, Haloperidol induced catalepsy in mice, Passive paw anaphylaxis in rats, Milk induced leukocytosis in mice.[16]
17.	*Curcuma longa* (Zingiberaceae) Rhizomes	Curcumin, curcuminoids	Mast cell degranulation.[17]

18.	*Cynodon dactylon* (Poaceae) Whole plant	Flavanoids, alkaloids, glycosides, terpenoides, triterpenoids steroids, saponins, tannins, resins, phytosterols.	Compound 48/80- induced mast cell degranulation in mice, determination of level of nitric acid in serum, compound 48/80-induced anaphylaxis in mice.[18]
19.	*Eclipta alba* Linn (Asteraceae) Whole aerial parts	Coumestans, alkaloids, flavonoids, glycosides, polyacetylene, triterpenoids.	Compound 48/80- induced degranulation of mast cell, egg albumin induced passive cutaneous and paw anaphylaxis, bronchoalveolar lavage (BAL)study on guinea pig trachea.[19]
20.	*Elephantopus scaber* (Asteraceae) Leaves	Flavonoids, phenols, steroids, tannins, terpenes, xanthoproteins and sugar.	Histamine and acetylcholine induced bronchospasm in guinea pigs, Mast cell degranulation in albino rats, Guinea pig tracheal chain preparation.[20]
21.	*Euphorbia hirta* (Euphorbiaceae) Whole aerial parts	Flavonoids, polyphenols, tannins, sterols, alkaloids, glycoside, triterpenoids.	Mast cell degranulation in rat, passive cutaneous anaphylaxis and paw anaphylaxis reaction in rat.[21]
22.	*Ficus bengalensis Linn* (Moraceae) Bark	Flavonoids, amino acids, alkaloids, gums, tannins.	Clonidine induced catalepsy, mast cell stabilization activity on rat.[22]
23.	*Hemidesmus indicus* (Asclepiadaceae) Roots	Pregnane glycosides, coumarin, lignoid, terpenoids, sterols, saponins.	Isolated goat tracheal chain preparation, passive paw anaphylaxis in rat and clonidine induced catalepsy in mice.[23]
24.	*Lepidium sativum* (Cruciferae) Whole herb	β-carotenes, ascorbic acid, linoleic acid, oleic acid, palmitic acid, stearic acid	Bronchospasm induced by histamine and acetylcholine.[24]
25.	Mucuna pruriens (Fabaceae) Seeds	Alkaloids, saponins, and sterols fatty acids, flavones, gallic acid, genistein, glutamic acid, glutathione mannosed, methionine	Clonidine induced catalepsy and mast cell degranulation in mice.[25]
26.	*Myrica esculata* (Myricaceae) Aerial parts and stem.	Myrisetin, myricitrin, glycoside	Bronchodilator activity in guinea pigs, egg albumin induced anaphylaxis.[26]
27.	*Myrica nagi* (Myricaceae) Bark	Myricitrin, myricanol, myricanone, gallic acid, ethyl *β-D* glucopyranoside	Acetylcholine induced bronchospasm in guinea pigs, acetylcholine induced contraction on isolated guinea pig tracheal chain preparation, compound 48/80 induced mast cell degranulation using rat, and trypsin and egg albumin induced bronchospasm in conscious rat.[27]
28.	*Nyctanthes arbortristis* (Oleaceae) Bark	Alkaloids, steroids, tannins, flavonoids, reducing sugars, saponins, and terpenoids.	Clonidine induced catalepsy in mice.[28]
29.	*Olea europea* (Oleaceae) Ripe fruit	Flavonoids, secoiridoids, iridoids, flavanones, biophenols, triterpenes, benzoic acid derivatives, isochromans	Clonidine induced peritoneal mast cell degranulation in rats, catalepsy in mice, histamine induced contraction of goat trachea and guinea pig ileum.[29]
30.	*Phymatodes scolopendria* (Polypodiaceae) Aerial parts	Coumarin, terpenoids, glycosides	Histamine or carbachol precontracted guinea pig trachea.[30]
31.	*Piper longum* linn	Piperine, rutin, beta-	Isolated guinea pig ileum preparation,

	(Piperaceae) Fruit	caryophyllene piperyline, piperoleines, piperamine, sabinene, chavicin, pinene, phellandrene, pentadecane, beta-bisabolene, linalool and limonene	Histamine induced bronchospasm in guinea pig, Milk induced leukocytosis ion mice, Haloperidol induced catalepsy in mice, passive paw anaphylaxis in rats.[31]
32.	*Piper betel* linn (piperaceae) Leaves	Tannins, anthraquinones, flavonoids, alkaloids, terpenoides, saponlns, cardiac- glycosides, glycosides, reducing sugars, phlobatanins	Histamine induced bronchoconstriction in guinea pig and histamine induced dose dependent contraction of guinea pig tracheal chain and isolated guinea pig ileum preparation.[32]
33.	*Ricinus communis* (Euphorbiaceae) Roots	Steroids, Saponin, Alkaloids, Flavonoids, and Glycosides.	Milk induced leucocytosis and eosinophilia in mice, Egg albumin induced mast cell degranulations in mice and passive cutaneous anaphylaxis in rats.[33]

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