

A Review- Herbal Plants Used in the Management of Hypertension

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Date of Submission: 01-10-2021

Date of Acceptance: 15-10-2021

ABSTRACT - Hypertension or high blood pressure (BP) is a chronic medical condition and is a worldwide epidemic. High percentage of the world hypertensive population use herbal medicines, for primary health care because of their low cost, better acceptability and lesser side effects. Naturally occurring medicinal plants, herbs having antihypertensive potential, so, several ethnobotanical studies performed in different parts of world showed that hundreds of plants are used worldwide for empirical hypertension treatment. This work provides basic knowledge from medicinal plants used for high blood pressure treatment, to support future pharmacological and phytochemical investigation.

Keywords: Hypertension; Medicinal plants; Side effects; Herbs

Abbreviations: BP: Blood Pressure; NO: Nitric Oxide; ACE: Angiotensin- Converting Enzyme.

I. INTRODUCTION:-

Hypertension is a global epidemic, the most common chronic health problem, and a high risk factor for heart attack, arteriosclerosis, stroke, and end-stage renal disease. Twenty-five percent of the world's adult population has hypertension, and it is likely to increase to 30% by 2025 ^[1, 2].

Hypertension causes people to become involved with complications such as damage to the brain and the retinal artery, kidney dysfunction, diabetes and cardiovascular disease, disability, and death. The reasons that make hypertension more important are the increased risk of coronary heart disease and the incidence of cardiovascular events and stroke ^[3, 4]. Medications used to treat hypertension include captopril, prazosin, hydrochlorothiazide, atenolol, hydralazine, methylodopa, etc. ^[5-7].

Blood pressure (BP) is controlled by several mechanisms, (i.e., nitric oxide, (NO), neural mechanisms, renal endocrine mechanisms.

Many antihypertensive agents, such as diuretics, beta-blockers, calcium channel blockers, and kidney-cell blockers). renin The angiotensin system, such as angiotensin converting enzyme inhibitors and angiotensin II receptor blockers, among others, are used alone or in combination to treat this disease ^[8, 9]. But antihypertensive drugs have many side effects such as reduced kidney function, dry cough, Angioedema among others [10], so the treatment of hypertension with herbal medications is an alternative ^[11].

Blood Pressure Management by Medicinal Plants:-

The side effects of anti hypertensive have motivated researchers to find new drugs in metabolites or extracts of medicinal plants to control hypertension and cause fewer side effects ^[12-14]. Recently, several ethnobotanical studies conducted in different parts of the world showed that hundreds of plants are used throughout the world for the empirical treatment of hypertension ^[14-16]. On the other hand, the results of several ethnobotanical surveys indicated that the interviewed patients used medicinal plants to treat hypertension because phototherapy is cheaper, more efficient and better than modern medicine ^[9, 17]. Nature is the greatest source of remedy for many health problems. Today, herbal medicines are used alone or in conjunction with chemicals to treat various ailments ^[18, 19].

There are many medicinal plants recommended by native communities for the treatment of hypertension that provide new areas of research on the antihypertensive effect of medicinal plants ^[13, 16].

Ethnobotanical studies have described hundreds of plants used by communities for the management of hypertension; Only in four articles (2015-2016) were ninety-nine plants found, so Baharv and Ahmadi report twenty-seven medicinal

plants from twenty-two families; Polat et al., Five out of three families, Ahmad et al. Forty-six species of plants (forty-three genera, twenty-nine families) and Rawat et al. in a review they describe twenty-one plants with clinical evidence and an informed mode of action.

II. METHODS: –

In the review, first, the search was done by keywords such as blood pressure, medicinal herbs, extracts, essences, ethnobotanical and Iran from scientific databases, and databases such as Google

Scholar, SID, etc. Related articles were selected for review.

III. RESULTS:-

After reviewing the papers of this study, eventually 60 medicinal herbs including sage, barberry, eastern grapes, yarrow, hawthorn, rhubarb, sheng, olive, rhubarb, buckwheat, spring chamomile, milk thistle, jujube, strawberry, ziziphus, indole, besides, garlic, fennel, almonds, etc. are the most important recommended herbs in the treatment of hypertension in the herbal and ethnobotanical medicine resources.

Table 1: Some medicinal plants used for the treatment of hypertension; scientific name, family name, plant parts used ^[17-48].

Sr.No	Scientific Name	Family Name	Part Use	Therapeutic effect
1	Passiflora edulis	Passifloraceae	Leaves, fruit	Lowering blood pressure
2	Achillea wilhelmsii	Asteraceae	Hydroalcoholic extract aerial parts	Lowering blood pressure
3	Allium cepa L.	Amaryllidaceae	Bulb	Lowering blood pressure
4	Allium sativum	Liliaceae	Bulb	Lowering blood pressure
5	Allium sativum L.	Amaryllidaceae	Bulb	Lowering blood pressure
6	Anethum graveolens dhi	Apiaceae	Leaves	Lowering blood pressure
7	Apium graveolens	Apiaceae	Hydroalcoholic Leaf	Lowering blood pressure
8	Avena sativa	Poaceae	Whole Cerea	Lowering blood pressure
9	Berberis vulgaris	Berberidaceae	Fruit	Lowering blood pressure
10	Centaurea depressa M.	compositae	Seed	Lowering blood pressure
11	Cichorium intybus L	Asteraceae	Leave	Lowering blood pressure
12	Cratageus sp.	Rosaceae	Berry Extract	Lowering blood pressure
13	Hypericum perforatum	Hypericaceae	Leave	Lowering blood pressure
14	Laurocerasus officinalis R.	Rosaceae	Raw	Lowering blood pressure
15	Matricaria recutita	Asteraceae	Flower	Lowering blood pressure
16	Nigella sativa	Ranunculaceae	Seed Extract	Lowering blood pressure
17	Panax quinquefolius	Araliaceae	Ginseng	Lowering blood pressure
18	Rauwolfia	Apocynaceae	Reserpine	Lowering blood pressure

	serpentine		Alkaloid	pressure	
19	Rumex acetosella L.	Polygonaceae	Aerial Parts	Lowering pressure	blood
20	Viscum album	Santalaceae	Aqueous Leaf Extract	Lowering pressure	blood
21	Ziziphus zizyphus	Rhamnaceae	Fruit	Lowering pressure	blood
22	Ajuga chamaecistus	Lamiaceae	Aerial part	Lowering pressure	blood
23	Salvia sp	Lamiaceae	Petal	Lowering pressure	blood
24	Berberis vulgaris L.	Berberidaceae	Fruit and Leaf	Lowering pressure	blood
25	Achillea millefolium L.	Compositae	Flowering shoot	Lowering pressure	blood
26	Ecbalium elaterium	Cucurbitaceae	Root	Lowering pressure	blood
27	Ribes orientale	Grossulariaceae	Root	Lowering pressure	blood
28	Crataegus monogyna	Rosaceae	Flower and Leaf	Lowering pressure	blood
29	Taxus baccata L.	Taxaceae	Leaf	Lowering pressure	blood
30	Crataegus pontica	Rosaceae	Fruit and Leaf	Lowering pressure	blood
31	Paliurus spina-christi	Rhamnaceae	Fruit	Lowering pressure	blood
32	Tragopogon aureus Boiss.	Asteraceae	Leaf and Fruit	Lowering pressure	blood
33	Rumex pulcher L.	Polygonaceae	Root	Lowering pressure	blood
35	Nigella sativa L.	Ranunculaceae	Seed (Fruit)	Lowering pressure	blood
36	Anthemis cotula L.	Asteraceae	Inflorescence	Lowering pressure	blood
37	Suaeda altissima	Chenopodiaceae	Chenopodiaceae	Lowering pressure	blood
38	Silybummarianum	Asteraceae	Flower	Lowering pressure	blood
39	Crataegusaronia	Rosaceae	Fruit and Leaf	Lowering pressure	blood
40	Silybum marianum	Asteraceae	Fruit and Leaf	Lowering pressure	blood
41	Matricaria chamomilla	Asteraceae	Flower	Lowering pressure	blood
42	Rumex crispus L.	Polygonaceae	Leaf	Lowering pressure	blood
43	Ziziphus jujuba	Rhamnaceae	Fruit	Lowering pressure	blood
44	Olea europaea L	Oleaceae	Fruit	Lowering pressure	blood
45	Ziziphussp.	Rhamnaceae	-	Lowering pressure	blood

46	Urtica dioicaL	Urticaceae	-	Lowering blood pressure
47	Berberis sp.	Berberidaceae	-	Lowering blood pressure
48	Rubus sp.	Rosaceae	-	Lowering blood pressure
49	Mentha longifolia	Lamiaceae	Flower	Lowering blood pressure
50	Morus alba	Moraceae	Fruit	Lowering blood pressure
51	Falcaria vulgaris	Apiaceae	Flowers, Leaf and Stalk	Lowering blood pressure
52	Smyrniun cordifolium	Umbelliferae	Seed	Lowering blood pressure
53	Crocus hasskenechtii	Iridaceae	Root	Lowering blood pressure
54	Berberis integrima	Berberidaceae	Leaf and stalk	Lowering blood pressure
55	Ziziphus spina-christi	Rhamnaceae	Leaf and stalk	Lowering blood pressure
56	Allium ursinum	Liliaceae	Underground roots	Lowering blood pressure
58	Tragapogon caricifolius	Compositae	Aerial part	Lowering blood pressure
59	Anethum graveolens	Umbelliferae	Umbelliferae	Lowering blood pressure
60	Amygdalus scoparia	Rosaceae	Fruit	Lowering blood pressure

IV. DISCUSSION:-

Hypertension, which is called high blood pressure, is a chronic disease in which the blood pressure in the arteries increases. In this study, medicinal herbs of sage, barberry, oriental grapes, yarrow, hawthorn, rhubarb, sheng, olive, rhubarb, buckwheat, spring chamomile, milk thistle, jujube, strawberry, ziziphus, indole, plus garlic, fennel, almonds, etc. have been recommended in the treatment of hypertension. For rapid reduction of hypertension, dietary blood pressure balancers should be used instead of very morbid medications. Medicinal herbs are one of the solutions [26, 27]. Based on the results obtained, hypertension can be treated in many ways, including lifestyle changes or the use of herbal medications. The actions of the mechanism of these plants are not clear. Possibly they act, in part, by antioxidant activity [28, 29]. Antioxidants, in addition to antihypertensive activity, have been shown to have several beneficial effects in disease [30-37]. Therefore, other plants or agents that have these properties can reduce hypertension [38-48].

V. CONCLUSION -

There are many plants that are used in folk or traditional medicine for the management of hypertension, some have clinical evidence, some have scientific evidence of their mechanism of action and others do not, but it is undeniable that there is an inexhaustible source of these plants that need to be studied in depth. This work provides basic knowledge of the medicinal plants used for the treatment of arterial hypertension, to support future pharmacological and phytochemical investigations. Therefore, people suffering from diseases other than hypertension can benefit more from these plants. It appears that the medicinal herbs in this study have pharmacological substances, polyphenols, flavonoids, and antioxidants that enhance blood pressure reduction. Other plants that have these compounds, especially antioxidant activity, may have antihypertensive activity.

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