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**Mini Review on Antipyretic activities of Medicinal Plants**

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**ABSTRACT**

Medicinal plants have been being used by people in traditional health care systems for thousands of years. Various modern medicines are discovered that are used to treat various ailments but they have side effects. Popularity of modern medicine is declining due to adverse effects. Herbal medicines have fewer side effects and are cheap. Literature review indicate that herbal medicine have proven pharmacological activities. These plants are alternative source of herbal origin. We present a review of anti-pyretic activity of this plant in order to provide comprehensive documentation and suggest perspective for future research. A review of literature published in scientific journals, books, thesis and reports. Medicinal plants having activity include such as *Alstonia boonei*, *Cymbopogon citratus*, *Cuscuta reflexa Roxband* *Solanum nigrum* etc. To our knowledge, this paper is the most comprehensive to date to reveal medicinal potential of plants species and may be useful in the treatment of pyrexia.

**Keywords:** Pyrexia, medicinal plants, efficacy, literature review

**INTRODUCTION**

Pyrexia is symptom of various illnesses. Clinical features of pyrexia are light headache, loss of concentration, nausea, anorexia, weight loss, weakness, fatigue, depression, bodyache, lethargy, dehydration and change mouth taste. There are various types of antipyretic agent that are usually prescribed to treat pyrexia. Commonly used drugs are prostaglandin inhibitors such as salicylic acid etc. But all antipyretic drugs exert side effects such heart burn and gastric acidity. Therefore there is

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need to find new drugs that are cheap and safe. Herbal medicine could be good source of anti-pyretic drugs of plant based medicine. Medicinal plants are investigated previously in vitro, in vivo or clinically <sup>1, 2, 3, 4</sup>. An attempt has been made to document the plants having antipyretic activity.

**METHODS**

A review of the literature published in scientific journals, books, thesis and reports. Data was searched by using words such as antipyretic activity of plants, plant having antipyretic activity.

Medicinal plants with anti-pyretic and related beneficial properties

*Alstonia boonei*

*Family:* Apocynaceae, *Parts used:* Bark, *Medicinal uses:* It is used in arthritis, inflammation, malaria, diabetes mellitus, helminthiasis, bacterial infection, dysmenorrhoea, urethritis and jaundice. *Pharmacological activity:* It is analgesic, hypoglycemic, anti-bacterial and anthelmintic. *Study:* Stem bark of *Alstonia boonei* was assessed for its antipyretic activity. Methanolic extract of this plant was used for this purpose. Analgesic activity was significant that was observed on reduction of writhings induced by acetic acid. There was also reduction in early and late phases of paw licking in mice. Extract showed significant ( $P < 0.05$ ) reduction in hyperpyrexia in animal mice model <sup>5</sup>.

*Cuscuta reflexa Roxb*

*Family:* Cuscutaceae, *Parts used:* Whole plant, *Common name:* Akash Bail, *Chemical constituents:* Dulcitol, cuscutin, amarbelin, leutolin glycosides, quercetin, leutolin. *Medicinal uses:* It is used in liver and spleen disorders. *Pharmacological activity:* It is anti-dandruff agent. *Study:* *Cuscuta reflexa Roxb* was investigated for its antipyretic activity. For this purpose, aqueous and ethanol extracts were assessed by using Brewer's yeast induced pyrexia in rats. Dose of extract was 200 and 400 mg/kg body weight. Both aqueous and ethanol extracts exhibited antipyretic activity and there was significant reduction in increased rectal temperature. Rectal temperature was decreased after 3 hour of treatment depending on the dose. Aqueous extract at dose of 400 mg/kg body weight reduced 79% of the elevated rectal temperature. Methanol extract at dose of 400 mg/kg body weight reduced 83.8% of the elevated rectal temperature after 6 hours of extract administration. Both extract were found effective and can be used to treat hyperpyrexia <sup>6</sup>.

*Solanum nigrum*

*Family:* Solanaceae, *Chemical constituents:* Riboflavin, steroidal glycosides, saponin, tannin,

diosgenin, solasonine, beta solarnigrine, sitosterol, citric acid, beta carotene, vitamin C, nicotinic acid, carbohydrate and protein. *Medicinal uses:* It is used in liver disorders, chronic fever and splenomegally. *Pharmacological activity:* It is anti-inflammatory. *Study (1):* Zainul et al has reported the antinociceptive, anti-inflammatory and antipyretic effects of *Solanum nigrum* chloroform extract in animal models <sup>7</sup>. *Study (2):* Aqueous extract of *Solanum nigrum* was investigated for its anti-pyretic activity. For this study animal models were used. Extract was given subcutaneously in mice and rats 30 min prior to the tests. Significant antipyretic activity was observed by two tests. First was carrageenan-induced paw edema and 2nd was brewer's yeast-induced pyrexia tests. Extract was efficacious and effective on dose dependent manner. This study indicate that *Solanum nigrum* has potential to treat pyrexia and this study supported its use in unani medicine as anti-pyretic agent <sup>8</sup>.

*Sida cordifolia*

*Family:* Malvaceae, *Local Name:* Khiranti, *Parts used:* Root, seed. *Chemical constituents:* Potassium nitrate, steroids, protein, resin, phytosterol, ephedrine. *Medicinal uses:* It is used in leucorrhoea, facial paralysis, tuberculosis and conjunctivitis. *Pharmacological activity:* It is tonic and cardioprotective. *Study:* Methanolic extract of *Sida cordifolia* were investigated for their anti-pyretic activity. Pyrexia was induced by TAB vaccine. 500 mg/kg of methanolic extract of *Sida cordifolia* was administered orally in rats. This extract was effective at oral dose of 500 mg/kg and temperature was reduced significantly <sup>9</sup>.

*Solanum melongena Linn*

*Family:* Solanaceae. *Medicinal uses:* It is used in hyperlipidemia. *Study:* A study was conducted to investigate the antipyretic activity of dry residue of leaf juice of *Solanum melongena*. Pyrexia was induced by yeast in rats and dose of extract was 100, 250 and 500 mg/kg. Flvonoids, tannins, steroids and alkaloids were determined on phytochemical

screening. Furthermore, toxicity study was carried out. There was no mortality observed at a dose as high as 4 g/kg. Antipyretic activity was dose dependent and significant activity was observed at 500 mg/kg dose. This study indicated that *Solanum melongena* has antipyretic activity that validates its use in traditional medicine <sup>10</sup>.

#### *Chromolaena odorata*

*Family:* Asteraceae. *Part used:* Leaves. *Medicinal uses:* It is used in skin wounds and skin infection.

*Pharmacological activity:* It is wound healer. *Study:* A study was conducted to investigate the anti-pyretic activity of ethanolic extract of *Chromolaena odorata*. Antipyretic activity was determined by using standard experimental models. Pyrexia was induced by yeast. Study indicated that plant has antipyretic activities and flavonoids were found on phytochemical analysis <sup>11</sup>.

#### *Rumex nepalensis*

*Family:* Polygonaceae. *Parts used:* Leaves and roots.

*Chemical constituents:* It contains oxalic acid and tannin. *Medicinal uses:* It is used in viral infection and sting of nettles, *Pharmacological activity:* It is astringent. *Study:* A study was conducted to investigate the anti-pyretic activity of *Rumex nepalensis*. Hexane, ethyl acetate, chloroform and methanol extracts were used for study. Dose of extract was 500 mg/kg. Extract was administered orally. Significant antipyretic activity was observed by methanol and hexane extract. This study validates its use in traditional medicine <sup>12</sup>.

#### *Garcinia hanburyi*

*Family:* Clusiaceae, *Study:* Antipyretic activity of *Garcinia hanburyi* was investigated using experimental animal models. Pyrexia was induced by yeast in rats and anti-pyretic activity was significant. Furthermore, study indicated that antipyretic activities are due to prostaglandins inhibition <sup>13</sup>.

## CONCLUSION

Medicinal plants have activity to treat pyrexia and are prescribed by Unani Physician in all over the world. The present review demonstrates the anti-pyretic activity of commonly used medicinal plants in Unani system of medicine. Further, study should be carried out to identify the active constituents and to understand the mechanism of action.

## ETHICS STATEMENT

This is a review article and there is no need of approval from ethical committee.

## CONFLICT OF INTEREST

There is no conflict of interest.

## DISCLOSURE STATEMENT

None of the authors have a financial or proprietary interest in the subject matter or materials discussed in the manuscript, including, but not limited to, employment, consultancies, stock ownership, honoraria, and paid expert testimony.

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