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Medicinal Plants to Combat with Fever

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Abstract

The fever itself is not a terminal condition. Basically, it occurs with mild to serious diseases affecting the large population of the world. Fever accompanied by alterations in immune responses, changes in physiological and metabolic characteristics of the body, and by several sickness behaviours. Various allopathic drugs are available to treat fever by targeting the symptom or t0he pathogen itself. However, a large number of marginal peoples are obligated to utilize locally available medicinal plants for the treatment of various diseases due to limited access to synthetic drugs. Thus, the aim of study is to describe the use of ethno-medicinal plants for the cure of fever.

Keywords: Allopathic drugs, Diseases, Fever, Medicinal Plants

Introduction

There are various diseases that include fever as a symptom. The main function of fever in recovery of diseases is still unknown, it is determined that the fever is involved in disease-fighting mechanism wherein host body temperature rises to the level that stresses pathogenic organisms (Phuthum and Sadgrove, 2020). But infection is not only the cause of fever. Various pharmacological agents induce drug fever by a variety of mechanisms, which raises the body temperature beyond normal (Walter and Carraretto, 2015). However, traditional medicine is preferred by a large number of the world population, especially in developing countries as the primary health care system. Different parts or extracts of medicinal plants are being utilized to alleviate the symptoms and revert the abnormal condition back to normal. This is due to various reasons including, affordability, accessibility, no side effects and effectiveness (OtengMintah et al., 2019). So, through this article we reviewed the role of medicinal plants to combat fever.

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Causes of fever

The cause of fever is usually an infection of some kind or some other factors. This could include:heat stroke, chronic illness, drugs,Virus and bacteria, and tropical diseases as shown in Figure 1.

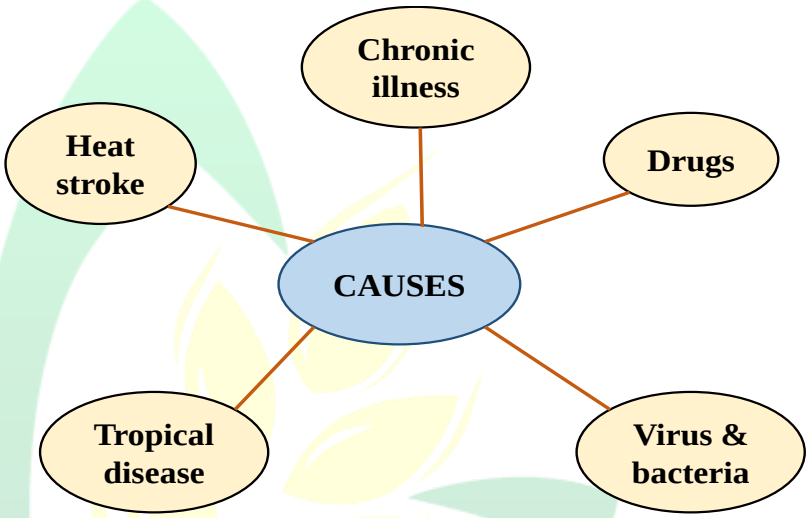

Figure 1: Causes of fever

Symptoms

The fever is characterized by sweating, fall and rise in body temperature, rigors, and chills. Some other symptoms such as anorexia, malaise, and headache also accompany fever (Ogonia, 2011).

Classification of Fever

Fever can be classified into the following based on their duration and temperature (Dinarello et al., 2005; Ogonia et al., 2011).

1. Based on the duration of fever

Acute Fever	Sub-acute fever	Chronic fever
<7 days	More than 2 weeks	>2 weeks
Characterstics of disorders such as Malaria and viral related upper respiratory	Characterstics of disorders such as intra-abdominal abscess and typhoid fever	Characterstics of disorders such as connective tissue diseases, cancer, HIV, and

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infection		tuberculosis

2. Based on height of the temperature

Low grade	Moderate grade	High grade	Hyperpyrexia
38.1-39˚C	39.1-40˚C	40.1-41.1˚C	>41.1˚C

Synthetic drugs and their side effects

Acetaminophen, Aspirin, and non-steroidal inflammatory drugs (NSAIDs) Ketoprofen, Ibuprofen, Naproxen have been used medically for fever. Side effects associated with NSAIDs and Aspirin arises because of well-known effects on cyclooxygenase(COX). Inhibition of COX causes more serious toxic effects on renal and gastro-intestinal (GI) toxicity (Plaisance, 2000). Some other side effects of synthetic drugs are discussed in Table 1.

Table 1: Various side effects of synthetic drugs

Short term effects	Long term effects
Kidney malfunction, high fever, heart attack, heavy sweating, vomiting, nausea, headache, insomnia, depression, panic attack, anxiety, hallucination	Death, breakdown of skeletal muscle tissue, paralysis, brain death, brain swelling, liver damage, and kidney failure

Medicinal plants used to cure fever

Due to increased resistance of microorganisms to anti-fever therapy and harmful effects of synthetic drugs, various medicinal plants or their different parts have been explored for their anti-fever properties and some of them are summarized below in Table 2.

Table 2: Medicinal plants used to combat fever

Botanical names	Common names	Family	Plant parts used	Mode of action	References
Alocasiamacrorrhizos	Giant elephant ear	Araceae	Tuber	Treat malaria	Frausin et al., 2015

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Desmosteysmannii	Molisunrumungkut	Annonaceae	Decoction of leave		
Duguetiafurfuracea	Pinha-de-guara		Bark		
Arum maculatum	Wild arum	Araceae	Leaves		
Phyllanthusemblica	Amla	Euphorbiaceae	Leaf extract	Treat malaria	OtengMintah et al., 2019
Syzygiumaromaticum	Clove tree	Myrtaceae	Flower buds extract		
Xylopiaemarginata	Custard apple	Annonaceae	Root, bark and stem bark extract		
Harrisoniaabyssinica	Msamburini	Rutaceae	Stem bark extract		
Mayterussenegalensis	Spike thorn	Celastraceae	Stem bark extract	Treat fever	OtengMintah et al., 2019
Abelmoschusesculentus	Bhindi	Malvaceae	Leaves		Tomar, 2017
Viola odorata	Sweet violet	Violaceae	Leaves		Hadian et al., 2019
Portulacaoleracea	Common purslane	Portulacaceae	Dried aerial part		
Cichoriumintybus	Chicory	Compositae	Seeds and roots		
Citrulluslanatus	Watermelon	Cucurbitaceae	Fruit juice	Typhoid fever	

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Lawsoniainermis	Henna	Lythraceae	Leaves	Treat fever	
Toddaliaasiatica	Orange climber	Rutaceae	Roots	Treat malaria	Onguéné et al., 2013

Conclusion

Due to our modern lifestyle, we are moving away from the nature that leads to various health issues and fever is one among them. In this article we documented the anti-fever activities of medicinal plants as they are safe, easily available with no side effects and also independent of any age group and the sexes. But further research on the processing of isolated compounds into potent and new medicine and their mode of action is still required.

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