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Research Article

CLASSICAL USES OF HARIDRA (CURCUMA LONGA)

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A B S T R A C T

Turmeric is used in conventional management of medication. It is used as an antioxidant and different useful properties, such as anti-allergic,anti-bacterial, anti-inflammatory, blood purification etc. It is generally recommended as *Ayurvedic* drug and used in different diseases. Ayurvedic text has been described *Haridra* as the *Rasayana.*Ayurvedic pharmacodynamics of *C. longa* are described as: Rasa- *tikta and katu*, Guna - *rukhsha and laghu*, Virya - *ushna*, Vipak-ss*katu*, Doshaghnata – *tridoshshamak.* Route of administration-oral,nasal, over the skin etc. **Turmeric** (curcuma longa) is belong to rhizomatous family unit and has been broadly utilized herb in India since ancient time*. Turmeric*is *Kandughna, Lekhaneeya, Kushthaghna* and *Vishaghna.*Use of turmeric in *medojaarbuda* is mentioned in *Sushruta Samhita*. Its *kapha* and *vata-shamak* property is responsible for *shothghna* activity. Commercial available natural contains are – Curcumoid, curcumin (75%), demethoxycurcumin (15%), bisdemethoxycurcumin and volatile oil(10%).The main biological active polyphenol component of turmeric is Curcumin (diferuloylmethane). Curcumin is a component of turmericis strong anti-oxidant activity due to vitamin A & C. Turmeric powder has been conventional use in India in cooking as abundant source of Mg,Si,Na,Ni,Se,Fe,Mn,K.Turmeric is a rich source of volatile oil, includingzingiberone, atlantone, turmerone and other ingredient such as protein, sugar,resins, lignin,salt. Turmeric root contain is 10%resin which is a glucoside.Turmeric yellow colour gives by its component curcumin, Curcumin a polyphenol compound [C21H20 O6],can exist in two tautomeric forms -stable **enol** form (an alcohol), **keto** form (an aldehyde).A lots of classical uses of Turmeric has been mentioned in Ayurvedic text.

INTRODUCTION

Haridra (curcuma longa linn.)genus -Curcuma**,**Family-Zingiberaceae, Synonyms of haridra-Nisha, kanchani, Gauri, Krimighna, Varvarnini, Yoshitpriya, Hattavilasini.Turmeric is a rhizomatous everlasting plant with longish, pointed leaves and funnel-shaped shaped yellow flowers and grow up to 1m high with short stem.The rhizomes are boiled, dried, then prepare special bright yellow spice powder. that is broadly use as food product and food-colouring agent. It exhibits anti-inflammatory, anti-HIV properties. It is a potent scavenger of a variety of reactive oxygen species (ROS) including superoxide anion, hydroxyl radical, singlet oxygen, peroxy-nitrite and nitric oxide. It is inhibitor of ROS producing enzymes, cyclooxygenase and lipoxygenase and performs energetic position in the inhibition of COX-I and COX-II enzymes that are worried in the inflammatory reaction. Curcuma longa additionally is an advantageous domestic treatment for diarrhoea, sore throat, cough and normal cold, when taken orally with warm milk and tea. Turmeric is anti-bacterial,anti-spasmodic,anti-parasitic,nematocidal,anti-oxidant,anti-carcinogenic and anti-carcinogenic activity. Curcumin works by modulating multiple molecular targets while using cell signalling proteins, cell cycle protein, cytokines and chemokines, enzyme, receptors and cell surface adhesion molecules. Curcumin is lively element of turmeric which is hepatoprotective, reno-protective, anti-proliferative and anti-tumour agent.

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Therapeutic Effects of *HARIDRA*

Anti-Inflammatory Effect

Turmeric has triggered Infection, injury, irritation by the immune system. acute inflammation has therapeutic potential for wound healing and fighting infection but chronic inflammation can trigger the immune system for long periods and may result in chronic illness including cardiovascular, pulmonary, metabolic and neurologic disease, obesity, cancer, pancreatitis, arthritis, type2 diabetes.[1]

Turmeric has been used in Indian medicine for reducing pain, wound healing, swelling and inflammation is comparable to chemical drug like as phenylbutazone.Curcumin is a extract of curcuma longa demonstrate anti-inflammatory activity in vivo and in vitro.[2]

Cyclo-oxygenase (COX-2), lipoxygenase (LOX) are two enzyme that include in inflammation transforming arachidonic acid in prostaglandins which mediate inflammation and pain.[3] curcumin is a nontoxic natural ingredient which is effective modulating the inflammatory response by down regulating COX-2, LOX and iNOS enzyme. curcumin inhibit the inflammatory cytokinin, adhesion molecules, protein kinases, redox status, tumour-necrosis factor-alpha(TNF-a) and enzyme that have been linked to inflammation.[3,4]

Rheumatoid arthritis(RA) is a chronic inflammatory disease. General symptoms-tenderness and pain in the joint, swelling, difficulty in walking, stiffness, reduced motion. Non-surgical treatment involved painkiller-acetaminophen and opioid, NSAIDS (non-steroid anti-inflammatory drug) and anti-inflammatory, intra-articular glucocorticoids injection in joint disease. Curcumin has been proven to be effective in the treatment of arthriti

Anti-Oxidant Effect

Anti-oxidant play a very important role in protecting the body against the oxidative stress and radical damage which often are the cause of various disease. Anti -oxidant activity of curcumin is an important property of turmeric plant used in treatment of chronic diseases, mutagenesis, carcinogenesis, DNA damage, and inhibition of pathogenic bacterial growth.[5]

The essential trace element of turmeric plant like as-Zn, Mn, Mg, Ca, Se, Cu, Fe are known to posesstrong anti-oxidant effect. These metals are involved in constituents of superoxide dismutase, glutathione, oxide reductase, metallothionein which could increase the production of metal-depended enzyme thereby accumulation of pathological concentration of oxygen radicals would be decrease.[6]

The phenol group are an important component of curcumin and induce hydrogen bond accepter activity.[6] Curcuminhas shown to be a very significant scavenger of freeradicals including nitrogen dioxide radicals and hydroxy radicals.

In additional, curcumin exhibits a potent lipid soluble anti-oxidant and also inhibits lipid peroxidation in animal model. Curcuminoids are natural phenols that consist in beta-diketones and enolic form.Curcumin passes both phenolic group and Beta-diketones (two type of natural anti-oxidant) in the same molecule. The protective effect of curcuminoids in turmeric on human keratinocyte from hypoxanthine /xanthine oxidase injury have been proven.[7]

If the liver is damaged the liver enzyme AST and ALT will increase in the blood signalling of liver disease.[8] Improvementin hepatic function due to reduction of ALT and AST level. Beneficial effect of curcumin on hepatic function is related to its pleiotropic anti-oxidant activity. It prevent formation and scavenges reactive nitrogen species and reactive oxygen species.[7]

Anti-Diabetic Effect

The most important medical concern following DM would be it is effect on the organ of the body. High level of sugar in the blood (hyper-glycaemia) can cause manycomplication in diabetic persons. Curcumin can have possible hypo-glycaemic effect though some function, including the increase blood insulin level by stimulating the function of surviving pancreatic beta cell, decrease amount of beta 2-adrenoreceptors, and upregulating the activity of the insulin receptor gene in the skeleton muscle of STZ-induce type diabetic rats. Curcumin can be effective in improving the pathological change related to chronic diabetic condition by suppressing the inflammation, oxidative stress, hyperglycaemia, hyperlipidaemia .Some improved formulations of curcumin have been designed to increase it is physiochemical and pharmacokinetic properties. Most serious complication of diabetic mellitus is diabetic nephropathy. The intake of curcumin supplementation at the dose of 66.3mg per day for eight weeks was effective proteinuria (abnormal amount of protein in the urine), haematuria (blood in the urine)and systolic blood pressure in patients with uncontrollable lupus nephritis.[7]

Diabetes mellitus type 1 is autoimmune condition in which the body attacking own pancreas with antibodies, finally causes insulin deficiency. A study has shownoral administration of the water-soluble curcumin derivative for forty days decreased the blood glucose level and increase plasma insulin and C-peptide in diabetic rats. The level of lipid peroxidase in the pancreas and liver will decrease though the improvement of a lipid profile and oxidative status following the use of water-y6soluble curcumin derivative, which directly improve the diabetic condition. On the pathogenic cause of both types of diabetic mellitus is oxidative stress which led to pancreatic beta- cell apoptosis, resulting in the reduction of insulin secretion. Curcumin longa has shown to protect pancreatic beta-cell.The explanation might bedue to the presence of curcumin longa has shows to protect pancreatic beta-cell. The explanation might be due to the presence of curcumin in curcuma longa which has antioxidant and anti-apoptotic properties.[7]

Another complication of diabetes mellitus is hyperlipidaemia, an abnormal high concentration of fats or lipid in the blood.Curcumin has been shows to reduce serum and liver cholesterol, phospholipid, triglycerides, free fatty acids, and LDL cholesterol level. Another findings also indicate that curcuminnormalizes serum high- densitylipoprotein (HDL)cholesterol in diabetic rats after treatment. Curcumin was found to inhibit diabetic retinopathy suggesting it's potential in suppressing oxidative stress, inflammation and an increase in OHdG and nitrotyrosine.[7]

Diabetes is a risk factor for neuropsychiatric deficit including stroke, cerebrovascular disease, depression, anxiety, diabetic encephalopathy. Diabetic-encephalopathy is a serious complication of type1 and type2 diabetes which involve direct neural damage caused by intracellular glucose. Regular anti-hyperglycaemic regiments with the use of curcumin could be used for the treatment of diabetic encephalopathy. Curcumin significant decreased cognitive deficiency, cholinergic

dysfunction and serum level of tumour necrosis factor (TNF) and also prevent brain lipid peroxidation in diabetes rats. This result shows that curcumin, with it is lipid lowering and antioxidant properties, also usedas a supplement in diabetic patient with hyperglycaemia and hyperlipidaemia.[7]

Anticancer Effect

Cancer is abnormal proliferation of cells. Curcumin supressthegene promoting cell proliferation, angiogenesis, transformation and metastasis of tumours by significant inhibitory effect. Curcumin has cytotoxic anticancer activity on the tumour cells inducing by G2/M phase cell cycle and apoptosis by activating CHOP/GADD135. Curcumin has anti proliferating effect by demonstrate the regulatory protein of abnormal cellgrowth in cell cycle. Cyclin D1 has very important role in cell growth and development of many cancers such as prostate, breast and oesophagus. Curcumin has ability of eliminate the carcinogenic oxygen radicals such as peroxides, hydroxyl and super-oxides etc. curcumin has a best result of hepatocellular carcinoma by destroy the DNA function in cell growth, supressed the Ch1 protein and arrested the G2/M phase of cell cycle in hepatic cells. turmeric has best substances in management of oesophageal cancer by inhibiting of NF-kB inflammatory markers along this in gastric cancer diminish the epidermal growth factor receptor, activity of p21and kinase 1.Turmeric also effects on breast cancer OVCAR-3,MCF-7 and multiple signalling pathway which promote of tumour cell lines. The effect of curcumin depends upon proliferating rate of tumour cells, duration of treatment and cancer, concentration of turmeric and effected areas. [7]

Menstrual Problem of Women

Women who suffer from periodically menstrual cramp, using extract of turmeric twice daily for 2-3 weeks prior to expected menstruation cycle. Extract of turmeric is an antispasmodic nature for smooth muscle so it reduce menstruation cramping and reduce the severity of pain.[8]

Atherosclerosis

Turmeric may helpful in preventing the blockage of arteries. That can gradually cause a stroke and heart attack in one of two ways, Turmeric inhibit the oxidation of LDL(bad cholesterol) and make a cholesterol level low. Oxidized LDL deposit in the wall of blood vessels and contributes to the formation of atherosclerotic plaque. Platelets accumulate at the site of damaged blood vessels and form blood clots then blockage of the blood vessels.[8]

Other Health Disorder

Turmeric reduce congestion and inflammation from stagnant mucous membrane. Turmeric is anti-inflammatory to the mucous membrane, which coat the throat, stomach, lungs, and intestine. Regular use of turmeric can Benefit from colitis, Diarrhoea, Crohn disease and post salmonella, post-giardia condition. The Itching and inflammation that accompanies anal fissure and haemorrhoid can reduce by use of turmeric. Turmeric can also benefit skin condition such as-psoriasis, eczema, and acne for those it's potent detoxifier.[8]

Turmeric As Healing Properties

Turmeric purify the blood and skin condition,these are most common uses of turmeric in Ayurveda.[9]The main organ of that turmeric treats are the skin, heart, liver, and lungs.[9]Turmeric used for bleeding disorder, skin disorder, epilepsy and to help the expel *kaph*.[9]

Therapeutic Use of Turmeric

Turmeric used in Diabetic, digestion, cancer, anaemia, gallstone, indigestion, poor-circulation, IBS, parasite, infection, wound.[9]

1. Turmeric reduce urinary disorder, fever, diarrhoea, insanity, poisoning, cough and lactation problem.[9]
2. Turmeric help to manage female reproductive system, purify the uterus and breast milk and in men it purifyand build semen, which is counterintuitive for pungent bitter.[9]
3. Turmeric decreases kaph and so is use to induce eliminate mucous in the throat, watery discharge like leucorrhoea, and any pus in eye, ear, or in wound etc.[9]

Other activity like- [9]

1. Detoxify the liver
2. Fight allergies
3. Boost immunity
4. Stimulate digestion
5. Balance cholesterol levels
6. Enhance the complexion
7. Anti-oxidant.

Remedies of Turmeric Taken from Ayurveda Samhita and Ghranth

Thirst-Thirst cause by cough, one should take water processed with *haridra* and mixed with honey and sugar.[10]

Bronchial Asthma- The patient should inhale smoke of the wick made of *Haridra,lac,Devdaru,* orpiment, Eranda root, Patraand Mamsi together.[11]

Anemia- Haridra + Triphala + Ghee + Honey[12]

Jaundice- *Haridra*-ghrita,[13]*Haridra*, red ochre and *amalaki* used as collyrium alleviate jaundice.[14]

Vatarakta-Decoction of *Haridra* and *amla*mixed with honey should be taken in vata-rakta predominant in *kaph*.[15]

Prameha-Many remedies uses for *Prameha*

1. *Haridra* powder mixed with honey should be taken with the juice of *amalaki*.[16] 2. Decoction of *haridra* and *Daruharidra* is special medicine for Pistameha.[17]3.There is no *Prameha* incurable for *haridra*.[18] 4. *Haridra* mix with*amla* juice.[16]

Kustha-It is a sinful disease taking Haridra with cow urine for a month.[19]

Frackles- The paste of *haridra* and *Rakta Chandan* pounded with buffalo's milk should be applied on face. it helps to remove the dark shade of face.[20]

Piles- Paste of *Haridra*powder mixed with latex of *Snuhi*or *pippali*pounded with ox-bile and should be applied.[21]

COCLUSION

Turmeric has a lots of medicinal uses since ancient time. It has possess the activities like analgesic, anti-bacterial, anti-tumour, anti-allergic, anti-oxidant, anti-septic, anti-spasmodic, anti-inflammatory, alterative, appetizer, astringent, carminative, digestive, diuretic, cardiovascular, diuretic, stimulant and vulnerary. We can say that this the herbs which is used for both healthy as well as ill patients for health.

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