



A Review on the Efficacy of Siddha Medicine in treating *Anda Rogham* (Hydrocele).

**M. Aruna Devi¹, G. Kavitha¹, L. Parwin¹, K. Priyanka¹, S. Sathiyavani¹,
S. Vigneshwari¹.**

IInd Professional BSMS, Govt. Siddha Medical College, Palayamkottai, Tamilnadu,
India.

Abstract:

According to the saying, “Where Medicine ends, Surgery starts”, surgical interventions are advised for some clinical conditions where medications are not of much use. But there are people having aversion for surgery who look for the other alternates. Their choices of other alternates include Traditional Herbal remedies. In that way ‘*Anda Rogham* (Hydrocele)’ is a clinical condition often requiring surgical interventions. This review paper deals with the definition, classification, etiology and Patho-Physiology of the Siddha aspects of ‘*Anda Rogham*’. Single herbs and Siddha medicines which are effective in treating the conditions are also tabulated. Out of the compound drugs, ‘*Kazharchi Chooranam*’ is being widely used both internally and externally. One of the familiar thoughts in Siddha mentions that ‘diseases occurring in a particular organ are often cured by a raw drug resembling the same shape’. Similarly, the seeds of *Caesalpinia bonducella* resemble the shape of the testis. According to the available studies *Caesalpinia bonducella* exhibit anthelmintic, anti-inflammatory, anti-estrogenic, antitumour and muscle contractile properties. Scientific data in the form of In-vivo studies and Phytochemical studies already done in *Kazharchi* (*Caesalpinia bonducella*) have also been reviewed.

KEYWORDS:

Kazharchi Chooranam, *Caesalpinia bonducella*, Orchitis, In-vivo and In-vitro studies.

INTRODUCTION

As per WHO report, approximately 63% of Hydrocele cases are recorded in South-East Asian region and 33% of Hydrocele cases are in African region. According to the Official Foundation of American Urological Association nearly 10% of males are born with Hydrocele, it occurs in boys in between ages of 2 and 5 ,usually as a result of inflammation of the testis or epididymis , older men can develop a hydrocele , often following an injury in the scrotal area . Hydrocele is defined as abnormal collection of serous fluid in some part of the processus vaginalis, usually the tunica.

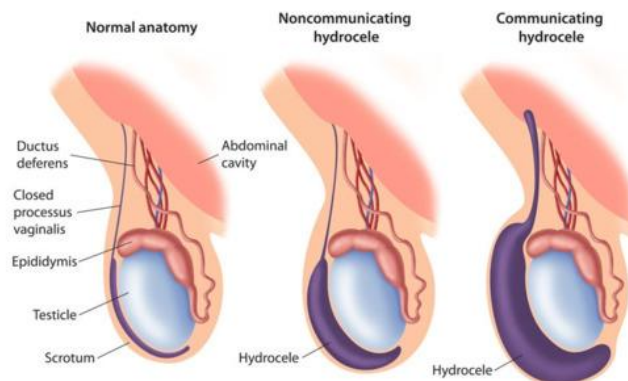
TYPES:

Commonly, Hydrocele is classified as primary (in neonates) and secondary (in adults). Primary in turn classified as communicating and non-communicating. If the communication with the abdominal cavity is persistent and remains open then it is called *communicating hydrocele*. If the opening closes but the fluid remains and does not get absorbed it is called a *non-communicating hydrocele*. Other than hydrocele, it may be pyocele, hematocele, chylocele.

PYOCELE - Collection of fluid which gets infected.

HEMATOCELE -Collection of blood in tunica vaginalis.

CHYLOCELE – Collection of fat in tunica vaginalis.



ETIOLOGY:

- Excessive production of fluid within the sac.
- Through defective absorption of fluid .
- By interference with lymphatic drainage of scrotal structures as in case of elephantiasis.
- By connection with hernia of the peritoneal cavity.
- Suppressive drugs.
- Tuberculosis, dropsy, gonorrhoeal infection and obstruction of abdominal vein.

SYMPTOMS:

- Elastic, smooth and painless enlargement of the scrotum.
- Sometimes inconvenience is caused during walking.
- Pressure is exerted on the testicles.
- If there is pain it denotes infection.
- The swelling might be worse in the morning than in the evening.
- Discomfort from the heaviness of a swollen scrotum.

EXAMINATION:

A physical examination in hydrocele is done by penetrating light through the scrotum. This is called trans-illumination. If fluid is present, the scrotum will allow light transmission, and the scrotum will appear to light up.

TABLE 1 Herbs that Effective in treating Anda Rogham:

HERBS	BOTANICAL NAME/FAMILY	PARTS USED	USAGE IN SIDDHA
B o n d u c n u t	Caesalpinia bonducella/ Caesalpiniaceae	Seed.	- Antispasmodic -Anthelmintic
I n d i a n b e e c h	Pongamia pinnata/ Fabaceae	Seed	- Anthelmintic -Parasiticide
Touch me not plant	Mimosa pudica/ Fabaceae	Seed	-Anti-inflammatory -Alterative
Indian laburnum	Cassia fistula/ Fabaceae	Seed	- L a x a t i v e -Vermifuge
B l a c k p e p p e r	Piper nigrum/ Piperaceae	Seed.	- A n t i d o t e -Resolvent



Table 2 Siddha Medicines for Treating Anda Rogham (Herbs, Metals, Minerals):

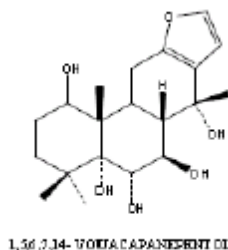
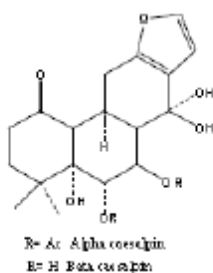
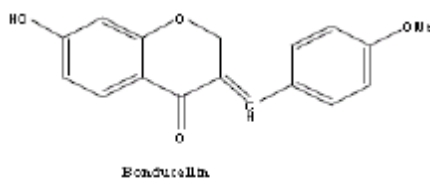
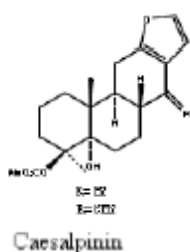
NAME OF THE MEDICINE	MAIN INGREDIENTS	USES IN SIDDHA	REFERENCE
Kazharchi chooranam	*Caesalpinia bonducella	*Hydrocele *Filariasis	Marunthu sei iyalum kalaiyum
Vengaara mathirai	*Vengaaram(sodium baborate) *Caesalpinia bonducella	*Hydrocele *Ascitis *Ulceritis	Siddha vaithya thirattu
Swayamagni chenduram	*Magnetic ore of iron *Purified iron fillings	*Hydrocele *Piles *Ascitis	Siddha vaithya thirattu
Nandi mye	*Semecarpus anacardium	*Hydrocele *Varicosity *Urticaria	Siddha vaithya thirattu
Navauppu mezhugu	*Navauppu	*Hydrocele *Ascitis *Ulceritis	Siddha vaithya thirattu
Katugurohani vatakam	*Helleborous niger *Tiripala	*Hydrocele *Convulsions *Amenorrhoea	Siddha vaithya thirattu
Kazharchi thailam	*Caesalpinia bonducella *Castor oil	*Hydrocele *Osteo arthritis	Siddha vaithya thirattu
Mayana thailam	*Nardostachys grandiflora *Beeswax	*Hydrocele *Convulsions in infant *Gonococcal arthritis	Pharmacopoeia of hospital of Indian medicine
Mulakudora thailam	*Terminalia chebula *Castor oil	*Hydrocele *Bleeding piles *Constipation	Pharmacopoeia of hospital of Indian medicine

***Kalarchi* (CAESALPINIA BONDUCELLA) :**

A famous Siddha thought mentions that ‘diseases occurring in a particular organ are often cured by a raw drug resembling the same shape’. Similarly, the seeds of *Caesalpinia bonducella* resemble the shape of the testis. In that way *kazharchi chooranum* is exclusively used in the treatment of hydrocele.

Phytochemicals[6, 19, 20, 23, 27-34, 71]

Whole plant of *Caesalpinia bonducella* contain all major chemical constituents such as Steroidal Saponin, Fatty Acids, Hydrocarbons, Phytosterols, Isoflavones, Aminoacids, and Phenolics,



Safety Profile

The maximum tolerated dose of the 50% ethanolic extract was found to be more than 1000 mg / kg body weight when tested in adult male albino mice [23].

Pharmacological Activities

Anthelmintic activity

Jabbar A, et al., has first time reported anthelmintic activity in *Caesalpinia bonducella* by invitro and invivo , they justified their use in the traditional medicine system of Pakistan[38].

Antiascarid activity of *Caesalpinia crista* seeds, popularly known as Karanjwa was e evaluated in chickens of the Fumi breed , suffering from artificially induced *Ascaridia galli* infection . *Caesalpinia crista* seed powder its equivalent methanolic extract and piperazine are equieffective in treating the ascarid infection of poultry[39].

Anthelmintic activity of leaves of *Caesalpinia bonducella* were investigated for their anthelmintic activity against *Phertima posthuma* ana *Ascaridia galli*. Various concentration were used in bioassay. Both extract showed significant anthelmintic activity[40].

Antifilarial activity

Caesalpinia bonducella seed kernel extract and fractions showed microfilaricidal, macrofilaricidal and female sterilizing efficacy against *L.sigmodontis* and microfilaricidal and female sterilizing efficacy againsts *B.malayi* in animal models, indicating the potential of this plant in providing a lead for new antifilarial drug development [41].

Antiestrogenic activity

Kanchan R, et al., results suggested that alcohol seed extract of *Caesalpinia bonducella* has antiestrogenic property, possibly acting via inhibition of estrogen secretion [42].

Antiinflammatory activity

The antiinflammatory activity was studied in rats using the formalin arthritis and granuloma pouch methods. At a dose of 250 mg/kg the extract was found to be effective in the granuloma pouch model and compared favourably with phenylbutazone. The seeds showed a 50% inhibitory activity against carrageenan-induced oedema in the rat hind

paw, at an oral dose of 1000 mg/kg, when given 24 hours and 1 hour prior to carrageenan injection (IP). The activity (66.67% inhibition) was comparable to that of phenylbutazone at a dose of 100 mg/kg [43-45]

Antibacterial, Antifungal, Antispasmodic activity

Khan HU, *et al.*, have been reported antibacterial, antifungal, antispasmodic and Ca⁺⁺ antagonist effects of *Caesalpinia bonducella* [52]. Saeed MA and Sabir AW. reported antibacterial activity in *Caesalpinia bonducella* seeds [53].

Antitumor activity

Gupta M, *et al.*, reported antitumor activity and antioxidant status of *Caesalpinia bonducella* against Ehrlich ascites carcinoma in Swiss albino mice. The methanol extract of *Caesalpinia bonducella* Fleming leaves (MECB) were evaluated for antitumor activity against Ehrlich ascites carcinoma (EAC)-bearing Swiss albino mice, report indicate that MECB exhibited significant antitumor and antioxidant activity in EAC-bearing mice [59].

Muscle contractile activity

Datté JY, *et al.*, Leaf extract of *Caesalpinia bonduc* Roxb. induces an increase of contractile force in rat skeletal muscle in situ. The pharmacological properties of *Caesalpinia bonduc* Roxb. are not well known, but it is used traditionally to treat snake bite. In the present study, the mechanism through which *Caesalpinia bonduc* extract (Cebo) affects gallamine-induced relaxation in rat tibial muscle contractility were studied via measurement of isometric-tension-anesthetized, 10-12-week-old, male rats. Isometric twitch contractions of the indirectly-stimulated anterior tibia muscle of the right hindleg were recorded in situ. Cebo administered intravenously increased twitch contractions in a dose-dependent manner. The ED₅₀ value is 2.75×10^{-4} g/kg body wt. Similar results were obtained using the anticholinesterase neostigmine. In contrast, gallamine (a non-depolarizing muscle relaxant) or the venom of the puff adder *Bitis arietans* reduced the force of contraction. Treatment with Cebo or neostigmine, however, reversed the relaxation induced by either gallamine or puff adder venom. In conclusion, Cebo

stimulates the muscle contractile activity, an effect which may be due to an activation of the cholinergic mechanism [68].

Datté JY, *et al.*, reported effects of leaf extract of *Caesalpinia bonduc* on the contractile activity of uterine smooth muscle of pregnant rats. The calcium dependency and the cholinergic effect of the leaf extract of *Caesalpinia bonduc* Roxb. was studied in isolated pregnant rat myometrium preparations. Isometric contractions were recorded. The extract (Cebo) increased the contractile force in the isolated strips in a concentration-dependent manner. The effects were comparable to those obtained with acetylcholine. Contractions induced by Cebo or acetylcholine were inhibited in the presence of atropine. The stimulating action of Cebo on the contractile responses of isolated myometrium preparations inhibited by atropine may be mediated by cholinergic receptors. In calcium-free solution Cebo induced a tonic contraction (contracture) of the muscle. Moreover, in high-potassium calcium-free solution Cebo caused contracture of the uterine smooth muscle. Cebo was still able to elicit contractions in calcium-free solution containing EDTA or EGTA. These findings suggest the existence of cholinergic receptors sensitive to Cebo which could influence the influx of calcium (phasic contraction) and mobilization of calcium from cellular stores (tonic contraction), both of which are responsible for the increase of contractile activity and development of the contracture of uterine smooth muscle [69].

Toxicity Studies

Preeja G. Pillaia and P. Suresh reported evaluation of acute and sub-acute toxicity of methanolic extract of *Caesalpinia bonducella* (L) Fleming was evaluated in Albino mice. The acute toxicity studies were conducted as per the OECD guidelines 420 where the limit test dose of 2000mg/kg used. Observations were made and recorded after treatment at 2 hrs, 4 hrs, 8 hrs and then for seven days regularly for respiration rate, heart rate, and behavioural signs like apathy, reduced locomotor activity as well as licking. For the sub-acute toxicity, three groups of 6 mice were received distilled water (control), 200 and 400 mg/kg of extracts every 24 hr orally for 28 days. No significant variation in the body and organ weights between the control and the treated group was observed after 28 days of treatment. Hematological analysis and clinical blood chemistry revealed no toxic

effects of the extract. Pathologically, neither gross abnormalities nor histo pathological changes were observed. No mortality was recorded in 28 days [75].

Kumar RS, *et al.*, reported investigation deals with the hematology and hepatorenal function of *Caesalpinia bonducella* Flem. and *Bauhinia racemosa* Lam. The tribal people of Kolli Hills, Tamil Nadu, India, use the leaves of *Caesalpinia bonducella* and the stem bark of *Bauhinia racemosa* in combination with some other herbs for the treatment of various tumors, liver disorders, inflammation and some other diseases. In ancient Ayurveda medicine these plants were mentioned to possess antitumor agents. Since there are no scientific reports regarding the toxicological aspects of these plants, the present investigation deals with the sub-chronic toxicity studies of a methanol extract of *Caesalpinia bonducella* (MECB) leaves and *Bauhinia racemosa* (MEBR) stem bark in Swiss albino mice. The MECB and MEBR were administered intraperitoneally to Swiss albino mice twice a week for thirteen weeks. No significant alterations in hematological, biochemical and histopathological parameters were observed in the MECB- and MEBR-treated groups at the doses of 100 and 200 mg/kg body weight. Administration of MECB and MEBR at the dose of 400 mg/kg body weight elevated the levels of serum enzymes and altered the hematological parameters. Our results suggested that MECB and MEBR at doses 100 and 200 mg/kg body weight did not induce any toxic effects in the mice. Adverse effect was noted at the dose of 400 mg/kg body weight [76].

DISCUSSION AND CONCLUSION:

The topic discussed above reveals the effective treatment of ANDA ROGHAM [hydrocele] in Siddha. Anda Rogham types ,etiology ,complications are discussed. Several herbs , metals and minerals used in siddha medicines and finished products for Anda Rogham are tabulated above. Phytochemical analysis, Pharmacological effects of *Caesalpinia bonducella* [*kazharchi*] are discussed in this paper. It also comes to light that Siddha concept, "A raw drug will be effective in curing diseases arising out of the organ having the same shape" is proved. So this is the right time to initiate more research in this 'Raw drug-Shape- Organ' concept.

REFERENCES:

1. Dr.Murugesu Mudaliyar, Siddha Materia Medica (vegetable section),volume1 ,Fourth edition,Publisher; Tamilnadu Siddha Medical Council(1988).
2. DR.C.S.Uthamaroyan,H.P.I.M.,Pharmacopoeia of hospital of Indian Medicine (SIDDHA)Published:Tamilnadu Siddha Medical Board (1956).
3. Dr. Deva Aashirvadam Samuvel MD(S)., Marundu Sei Iyalum Kalaiyum, Published:Indian medicine &Homeopathy Department,Chennai (1992).
4. DR.K.N.Kupusamy Mudaliyar,H.P.I.M., DR.C.S.Uthamaroyan,H.P.I.M.,Siddha Vaithya ThirattuPublished:Indian medicine &Homeopathy Department,Chennai (1993).
5. Hydrocele types (Online): Available <http://www.medindia.net/patients/patientinfo/hydrocele-types.html>
6. Khan Nazeerullah, Kumar Sunil, Singh Rishi, Dhankhar Neelam-A Lietary Review of aPharmacognostic and Pharmacological overview on Caesalpinia bonducella,Published:ResearchJournal Of Pharmaceutical,Biological and Sciences.
7. Komal Moon, S.S.Khadabadi, U.A.Deokate, S.L.Deore –an overview of Caesalpinia bonducella.(ONLINE)Available <http://www.sciencepub.net/report>.
8. S.B.Dahikar, S.R.Arrote, P.G.Yeole Department of Pharmaceutical Microbiology,Institute of Pharmaceutical Education and Research Boragon(Megha) Phytochemical Screening and Antibacterial properties of leaves of Pongamia pinnata Linn(Fabaceae),Wilolud Online Journals,2008.
9. Goli.Venkateshwarlu, Kanakam.Vijayabhaskar, G.Pavankumar, P.Kirankumar, K.Harishbabu,Ravi malothu (Online) Available www.jocpr.com,Journal of chemical and Pharmaceutical Research.

10. Pavithra Vanikarsha and O bhagya Lakshmi, Department of Microbiology and Department Of Botany –Antibacterial activity of black paper with special reference to its mode of action on Bacteric Indian Journal of Natural Products and Resources.