

## ROLE OF AYURVEDA IN THE MANAGEMENT OF HYDROCEPHALUS – A REVIEW ARTICLE

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### ABSTRACT

Hydrocephalus is a chronic neurological condition arising due to abnormal collection of cerebrospinal fluid in the ventricles of brain due to excessive secretion, impaired circulation and/or absorption of CSF. It mostly occurs in pediatric age group leading to mental retardation and even to death, if not managed properly. Ayurvedic system of medicine has a very scientific approach for its management. Its various principles of management and medicines can manage hydrocephalus effectively.

**Key words:** Hydrocephalus, *Sheershambu roga*, Ayurvedic system

### INTRODUCTION

Hydrocephalus is a chronic neurological disease in which there is abnormal collection of cerebrospinal fluid in the ventricles of brain due to impaired circulation and/or absorption<sup>1</sup>. In infants the obstruction may be caused by narrowing of CSF pathways, perinatal infection, and inflammation intraventricular hemorrhage especially in low birth weight babies or malformations. Less frequently the pediatric hydrocephalus is related to genetic disease or other growth within the skull. It has negative impact on the developing brain of the children. If it is not treated properly, it has high mortality and causes mental retardation in survivors. Prevalence of congenital and infantile hydrocephalus in the United States and Europe has been estimated as 0.5 to 0.8 per 1000 live and still births<sup>2, 3, 4</sup>. In ayurvedic system of medicine there is excellent approach to manage this condition. In Ayurveda, it is described as *Atidushchikitsya* (very hardly curable)

disease named as *Sheershambu roga* in *Bhaishajya Ratnavali*. Children during *dantodbhed* (dentition) are prone to develop this disease<sup>5</sup>

### CAUSES OF HYDROCEPHALUS DESCRIBED IN AYURVEDIC LITERATURE

- *Dustambupanat atishaityat va*<sup>5</sup> (intake of impure water, excessive cold intake.)
- *Antrakrimerudbhavtoabhighatat*<sup>5</sup> (intestinal worms and trauma)
- *Asatmyabhojyanashnatahsuraya atyarthpanat*<sup>5</sup> (intake of *asatmya* and excessive alcohol)
- *Pavanpradoshat*<sup>5</sup> (vitiation of vata)
- *Dauhrida aumanana and vataprakopa* during foetal life these conditions can produce abnormality in foetus.<sup>6</sup> Improper use of *Garbhini Paricharya* may also produces *garbha vikriti* which may be the cause of hydrocephalus.

## MANAGEMENT OF HYDROCEPHALUS ACCORDING TO AYURVEDA

### Principles described in Bhasajya Ratnavali<sup>7</sup>

1. *Nidan parivarjan* (removal of the cause)
2. *Shamshodhana* – mainly *rechana* (use of laxatives)
3. *Mutrpravatak* (use of diuretics)
4. *Raktadosh Shamak Chikitsa* (blood purifier medicines)
5. *Vatashamak chikitsa* (as vitiation of *vata* is important causative factor)
6. Removal of scalp hair completely then head covered with warm cloths.
7. If medicines for this disease are used during night may be more beneficial as it is *urdwajatrugata vikar*.<sup>8</sup>

### Drugs Useful in the Management Of Hydrocephalus

**Peetmulyadi Kwath:** Decoction made by *peetmuli* (*Rheum emodi*), *ananta*, *amalaki*, *trivrita*, *shati*, *Tikta* (*Picorrhiza kurroa*), *gopvadh* (*syamlata*), *abdam* (*mutha*), *dhanyak*, *madhuk*, *haridra*, *haritaki*, *twak*, *ela* and *patra* is used with *yavkshar*.<sup>9</sup>

**Salilshoshan Churna :** It contains *Rassindoor*, *yavkshar*, *peetmuli*, *trijatak*, *bharangi*, *ela*, *abhaya*, *indravaruni* in equal amount and taken with milk.<sup>10</sup>

**Kumkumadya Ghrita** It also useful in all types of *shiroroga*.<sup>11</sup> **Ghrita** are especially indicated in ayurveda for the diseases of *urdwajatrugata* (above the clavicles). *Raktadoshar* medicines and the medicines which are beneficial to break the pathology of hydrocephalus if used in the form of medicated *grita*, may be more potent. As only lipid soluble medicine can cross the blood brain barrier. *Grita* may facilitate penetration of medicine to the brain tissue for action. *Grita* itself may reduces the

edema of brain due to production of glycerol, as glycerol is produced during metabolism of fat in capillary epithelium of the liver<sup>12</sup>

**Rasataila**<sup>13</sup>: It is used as external application over hairless scalp. Its ingredients are *katu tail* (mustard oil), for *kalka dhatur*, *dhataki*, *murva*, *madhuk*, *vid lavan*, *shunthi*, *neelini*, *Krishna*, *katphala*, *katuka*, *sugandhbala* and *kajjali* is also mixed.

**Agnibhaskar rasa:** It is made by *bhasma* of *swarna*, *vaikrant*, *rajat*, *lauh*, *gandhaka*, *parad* and *swarnamakshik*. *Bhavna* is given by *raktachitrak* and *brahmi swaras*. Its ingredient *raktachitrak* (*Plumbago rosea*) possess antiproliferative quality. In a study *plumbagin* and ethanolic root extract of *plumbago rosea* was evaluated on SK-MEL 28 melanoma cell lines and human lymphocyte. This showed its *plumbagin* anticancer effect and when used with *plumbago rosea* extract displays stronger anticancer effect.<sup>14</sup>

**Rasasindur:** *Rasasindur* have *jwarnashak*, *sarvashothnashaka*, *sarvavata nashak* effect and posses the capacity of treating all types and diseases anywhere of the body<sup>15</sup>. it maintains the functions of all indriya of the body i.e maintenance of the nervous system.<sup>16</sup>

**Coconut oil:** Medium chain fatty acids in coconut oil go directly to liver from digestive tract. They are used as quick source of energy as ketogenic diet (very low carbohydrate and very high fat). This type of diet can reduce rate of seizures in epileptic children. Lauric acid in coconut oil have antiviral, antibacterial and antifungal effect.

**Peetmuli** (*Rheum emodi*): It has been traditionally used as diuretics, purgatives, antiseptic and have antitumor effect<sup>17</sup> that's why this drug is used in hydrocephalus.

Anthraquinone in water extract of rhubarb are aloe-emodin, rhein, emodin, chryso-phenol and physcion. In a study Anthraquinone in water extract of rhubarb, in CSF of patient with traumatic brain injury and in ipsilateral cortex of traumatic brain injury rats following oral water extract of rhubarb explored by ultra performance liquid chromatography-PDA method. The main ingredient in rhubarb, physcion was found against craniocerebral injury<sup>18</sup> There is no toxicity of rheum emodi rhizome extract in sprague dawley rats.<sup>19</sup>

**Use of Ayurvedic Garbhini Paricharya (antenatal care):** In ayurvedic classics<sup>20,21,22</sup> dietetic regimen, behavioral and medicinal advices are mentioned that can prevent many problems related to foetus and mother. Promoting use of ayurvedic management for pregnant to minimize the adverse effect of modern medicines. Ayurvedic *garbhini paricharya* can prevent preeclampsia, oligohyramnios, polyhyramnios, hypertention to mother, intrauterine hypoxia, and intrauterine growth retardation and other foetal anomaly.

## CONCLUSION

There is need to manage the child from the conception by the use of ayurvedic *garbhini paricharya*, avoidance of *garbhoghatkar bhavas*. If condition of hydrocephalus arise it should be manage early as possible by the use of various drugs and principles as described earlier.

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