

## DEHYDRATION IN CHILDREN WITH REFERENCE TO ATISARA AND ITS MANAGEMENT WITH AYURVEDA

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### ABSTRACT

Diarrhoea is described in Ayurvedic classics with the name of *Atisara*. Diarrhoea is important health problem in all age groups, and it is major cause of morbidity and mortality in developing countries. The American Academy of Paediatrics and the WHO have recommended oral replacement therapy for mild and moderate dehydration and children with severe dehydration should receive IV fluids. Abdominal pain, piercing pain in the regions of the heart, umbilicus, rectum, abdomen and in the *Kukshi* (sides of the abdomen), a sense of numbness in the limbs, stoppage or suppression of flatus and of stool, distension of the abdomen, and indigestion are the premonitory symptoms of the disease. In aetiology of *Atisara* also *Mandagni* leads to Ama formation which further leads to *Atisara*. *Agnidipan* is also very important in balancing Agni of patients. Regular feedings and nutrition should be continued to meet the infant's or child's maintenance needs.

**Keywords:** *Kukshi, Mandagni, Atisara, Amatisara, Deepan*

### INTRODUCTION

Diarrhoea is a one of the most common disease among the developing country and second common cause of death in children worldwide. *Atisara* (Diarrhoea) a disease in early stages still constitutes one of the chief problems in paediatric practice and also create problems in treating those child having undernourished conditions.<sup>1</sup> According to WHO Diarrhoea was estimated to have caused 1.1 million deaths in people of age 5 year or more and 1.5 million deaths under the age of 5 years. Diarrhoea is the third leading cause of childhood mortality in India and is responsible for 13% of all deaths / year in children below 5 years of age. Most of the Diarrhoeal incidents occur during the first 2 years

of life and highest incidence is in 6-11 months of age. Diarrhoea is important health problem in all age groups, and it is major cause of morbidity and mortality in developing countries.<sup>2</sup>

Dehydration is significant reduction of body water, electrolytes. Symptoms and signs include thirst, lethargy, dry mucosa, decreased urine output, loss of skin turgor, as the degree of dehydration progresses, tachycardia, hypotension, and shock. Hypovolemia occurs when fluid is lost from the extracellular space at a rate exceeding replacement. The typical sites for these losses are the gastrointestinal tract (Diarrhoea and vomiting), the Diagnosis is based on history and physical

examination. Infants are predominantly susceptible to the ill effects of dehydration because of their greater baseline fluid requirements (due to a higher metabolic rate), higher evaporative losses (due to a higher ratio of surface area to volume), and inability to communicate thirst. The most common source of increased fluid loss is the Gastrointestinal tract from vomiting, diarrhoea or both (e.g. gastroenteritis).

In Ayurveda, *agni* refers to a digestive fire like activity in alimentary canal responsible for digestion of food which is influenced by the status of *doshas*. When *samana-vata* associates with *kapha* in turn produces weak digestive power (*agni-mandya*). Consuming food against the *Ahara-vidhi vidhana* and *ahara-vidhi-visheshayatana* (method of taking food) lead to several diseases related with food. Eating food before the previous food is digested, untimely food, eating too much of spicy or oily food, eating when not hungry, drinking too much water during food and at a time unless required, very hot high fatty-fried food, stale food, heavy diet, excess consumption of horse gram, vitiate all the three body humours (*tridosha*) also contribute to the symptoms of gastritis. Most important factor in the pathogenesis of *Atisara* (Diarrhoea) is *Mandagni*. *Mandagni* is root cause of *Amadosha* and it is the crucial factor for manifestation of most of the diseases including *Atisara*.<sup>3</sup>

**Diarrhoea in Ayurveda:** Diarrhoea is described in Ayurvedic classics with the name of “*Atisara*”. Charaka Samhita has the complete description of *Atisara* in very elaborated form. *Atisara* has been a common problem in past and in the present time. Sushruta and Vagbhata have mentioned that *Krimi* is also a causative factor for *Atisara*. The term *Atisara* is combination of two words- ATI = Excessive and SARA = Passing of liquid matter through anus.

Dehydration, which may be associated with electrolyte disturbance and metabolic acidosis, is the most frequent and dangerous complication. Optimal management with oral or intravenous fluids minimises the risk of dehydration and its adverse outcomes. Routine use of antibiotics, antidiarrhoeal agents, and antiemetics is not recommended and may cause harm.

**Aetiology and Symptoms:** The liquid part *Aap dhatu* of the body, if aggravated and carried downward by the bodily *Vayu*, impairs the fire in the stomach (fire of digestion) and mixing with the faecal matter, is painfully and constantly emitted through the anus. This condition is known as *Atisara*.

Symptoms and signs of dehydration vary according to degree of deficit and by the serum sodium level. Because of the fluid shift out of the interstitium into the vascular space, children with hypernatremia appear more ill for a given degree of water loss than do children with hyponatremia. However, children with hypernatremia have better hemodynamic (e.g. less tachycardia and better urine output) than do children with hyponatremia, in whom fluid has shifted out of the vascular space. The symptoms of *Amatisara* include *Ama-yukta shweta varna mala Pravriti* with bad odour. *Mala* along with pain, *mala* along with sound (*Adhmana*, *Atopa*) faeces comes along with the food and the *mala* will have different colours coming out with difficulty very frequently.<sup>4</sup>

#### **Clinical evaluation of dehydration:**<sup>5</sup>

**Mild:** No hemodynamic changes (about 5% body weight in infants and 3% in adolescents)

**Moderate:** Tachycardia (about 10% body weight in infants and 6% in adolescents)

**Severe:** Hypotension with impaired perfusion (about 15% body weight in infants and 9% in adolescents)

However, using a combination of symptoms and signs to assess dehydration is a more accurate method than using only one sign. Another way to assess the degree of dehydration in children with acute dehydration is change in body weight; all short-term weight loss > 1%/day is presumed to represent fluid deficit. However, this method depends on knowing a precise, recent pre-illness weight. Parental estimates are usually inadequate; a 1-kg error in a 10-kg child causes a 10% error in the calculated percentage of dehydration—the difference between mild and severe dehydration. In dehydration, serum sodium values vary, depending on the relative loss of solute to water. Isonatremic dehydration is defined by sodium of 130 to 150 mEq/L (130 to 150 mmol/L). This reflects an equal proportion of solute and water loss.

**Modern Management of dehydration: Resuscitation**

The American Academy of Pediatrics<sup>6</sup> and the WHO<sup>7</sup> have recommended oral replacement therapy for mild and moderate dehydration and children with severe dehydration should receive IV fluids. Children who are unable or unwilling to drink or who have repetitive vomiting can receive fluid replacement orally through frequently repeated small amounts, through an IV. Patients with signs of hypoperfusion should receive fluid resuscitation with boluses of isotonic fluid (e.g. 0.9% saline or Ringer's lactate). The goal is to restore adequate circulating volume to restore blood pressure and perfusion. The resuscitation phase should reduce moderate or severe dehydration to a deficit of about 8% body weight. The end point of the fluid resuscitation phase is reached when peripheral perfusion and blood pressure and the heart rate are restored to normal. The goal of therapy is to recognize the degree and type of dehydration and to restore any water and electrolyte deficits while meeting maintenance needs and replacing ongoing losses.

**Management of childhood diarrhoea in Ayurveda: -**

*Atisara chikitsa* should be decided once there is definite decision of *Sama* and *Nirama avastha* of the *dosha*. In *Amavastha*, those drugs having property of *deepana*, *pachana* and *langhana* should be used in any formulations. In the *Niramavastha* the drugs which have *stambhana* properties should be administered.<sup>8</sup>

Ayurveda many single drug formulations are described for different types of Diarrhoea. *Ativisha* (*A. heterophyllum* Wall.), *Bilva* (*A. marmelos*), *Sunthi*, *Indrayava*, *Patol*, *Lodhra* (*Symplocos racemosa* Roxb.) and *Dhataki* (*Woodfordia fruticosa* Kurz.) seed decoction is effective in treatment of severe Diarrhoea. Oral use of *Pippali* (*Piper longum* Linn.) with honey, *Patha*, *Daruharidra*, *Chitraka* (*Plumbago zeylanica* Linn.) with buttermilk and *Bilva* fruit (*Aegle marmelos* Correa.) are also seems to be effective in diarrhoea related dehydration.<sup>9,10,11.</sup>

Ayurveda prescribed Compound formulation for treatment of Diarrhoea in children *Balchaturbhadra Churna* is effective in Diarrhoea having ingredients are *Mustha*, *Ativisha*, *Pippali* and *Karkatsringi* possesses *Deepan*, *Pachana* and *Grahi* properties. *Gangadhar*

*Churna* useful to stop progression of Diarrhoea and further complications. It contains *Mustaka*, *Araluka*, *Shunthi*, *Lodhra*, *Sugandhbala*, *Bilva*, *Mocha rasa*, *Patha*, *Kutaj* seed and *Ativisha*.

*Piccha-Vasti* should be applied (into the rectum) in a case of *Atisara* marked by painful and frequent emission of blood, though in scanty quantities at a time, and by an entire suppression of *Vayu* (flatus). A purgative consisting of the decoction of *Vidanga*, *Triphala* and *Pippali* should be given to a patient with good appetite as soon as the stool would assume the colour of blood. In the alternative, a purgative consisting only of milk cooked with *Eranda*- roots (castor plant) should be employed and the patient should be given *Yavagu* prepared with appetising and *Vayu*-subduing drugs.

Milk should be given in a case of *Atisara* marked by the suppression of stool and *Vayu* and attended with griping (*Shula*), constant scanty motions, symptoms of *Rakta-pitta* and thirst.

**DISCUSSION**

*Agnimandya* is the prior stage of almost all the diseases. In aetiology of *Atisara* also *Mandagni* leads to *Ama* formation which further leads to *Atisara*. *Nidanas* of *Atisara*(diarrhea) can be acknowledged under four broad titles as viz. *Aharaja*, *viharaja*, *manasika* and *agantuja nidanas*. *Nidana* are further divided as *samanya nidana* and *visesha nidana*. *Viseshanidana* causes the *dushti* of particular *dosha* and produces the disease accordingly. *Samanya nidana* comprises the unpleasant diet and activities such as excessive consumption of food, food items which is incompatible and not suitable for an individual. *Agnidipan* is also very important in balancing *Agni* of patients. *Atisara* (diarrhea) leading to *agnimandya* and *ajeerana* which in turn causes *dushti of koshta* and *pakwamashaya*. As a result, *apdhatu* reaches *vimargagamana* from different part of the body to *koshta*, leading to increase in *dravata* of *pureesha* in *pakwasaya* manifesting as *Atisara* (diarrhoea). It is said to be *Asaadhya* (difficult to treat (in *bala*, *vidha* when many *upadravas* (Complication) are present and in a young man who has *atidhatudushti*. Dehydration is common in infants as well as children, especially gastrointestinal illnesses like

diarrhoea, dysentery. Children with more severe dehydration or with abnormal serum sodium values should be treated with intravenous infusions (IV Fluids).

## CONCLUSION

It is important for the clinician to understand how to determine the correct fluid and electrolyte solutions to meet the child's maintenance, deficit, and ongoing losses. Prevention is the key to controlling gastroenteritis, and recently licensed, highly effective vaccines like rotavirus will have a major effect on public health. Regular feedings and nutrition should be continued to meet the infant's or child's maintenance needs.

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