

## An Overview and Approach towards Intellectual Disability and its Management in Ayurveda

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### Abstract

Intellectual disability (formerly called mental retardation) refers to a group of disorders that have in common deficits of adaptive and intellectual function and an age of onset before maturity is reached. Three criteria must be met to establish the diagnosis of intellectual disability: significantly sub average intellectual function, significant impairments in adaptive function, and onset before 18 yrs of age. Though Ayurvedic literature does not describe it clearly as a separate disease entity but it throws light on the aetiopathogenesis, presentation, along with prophylactic and some specific measures for management of such disorders. After summarizing scattered references on intellectual disability, it is clear that genetic factors (*beejadosha*), improper diet (*apathya*), suppression of natural urges (*vegadharana*) and gynecological disorders (*yonidosha*) during pregnancy play important role in the development of fetal disorders (*garbhavikrati*) and mental disorder (*manasikvikara*). Currently available treatment in conventional system of medicine is palliative while in Ayurveda *medhya* drugs (memory boosters and enhancers) are described for such disorders which are quite safe and free from side effect. In the present review article author did an effort not only to highlight etiopathology but also management of intellectual disability supported by various studies in the field of Ayurveda.

### Keywords

*Mansikvikara, Intellectual Disability, Mental retardation, Ayurveda, Medhya, Beejdosha, Garbhavikruti*



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## INTRODUCTION

Intellectual disability (ID), also called intellectual development disorder (IDD) or general learning disability, and formerly known as mental retardation is a generalized neuro-developmental disorder characterized by significantly impaired intellectual and adaptive functioning<sup>1</sup>. It is defined by an IQ score below 70 in addition to deficit in two or more adaptive behaviours that affect every day, general living<sup>2</sup>. Once focused almost entirely on cognition, the definition now includes both components relating to individuals functional skills in their environment. Intellectual disability subdivided into syndromic intellectual disability, in which intellectual deficit associated with other medical and behavioural signs and symptoms are present, and non syndromic intellectual disability, in which intellectual deficit appear without other abnormalities. Down syndrome and fragile X Syndrome are example of syndromic intellectual disabilities. Three criteria must be met to establish the diagnosis of intellectual disability: significantly sub average intellectual function, significant impairments in adaptive function, and onset before 18 yrs of age. According to statistics (based on the DSM-

IV-TR definition), 2.5% of the population should have intellectual disability, and 85% of these individuals should fall into the mild range.

## DIAGNOSTIC CRITERIA FOR INTELLECTUAL DISABILITY<sup>3</sup>

A *Significantly subaverage intellectual functioning*: An IQ score of 70 or below on an individually administered IQ test (for infants, a clinical judgment of significantly sub-average intellectual functioning)

B Concurrent deficits or impairments in present adaptive functioning (i.e., the person's effectiveness in meeting the standards expected for his or her age by his or her cultural group) in at least two of the following areas: communication, self-care, home living, social and interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety

The term **mental retardation** should be cast aside because it is stigmatizing, has been used to limit the achievements of the individual, and has not met its initial objective of providing assistance to people with the disorder. The term **intellectual disability** is increasingly used in its place but has not been adopted universally; existing laws and their attendant

entitlements still use the term mental retardation. In Europe, the term **learning disability** is often used to describe intellectual disability. **Global developmental delay** is a term often used to describe young children whose limitations have not yet resulted in a formal diagnosis of intellectual disability; it is often inappropriately used beyond the point when it is clear the child has intellectual disability, usually age 3 years<sup>4</sup>.

In Ayurveda number of psychological disorders is described in details but regarding intellectual disability it is lacking. After summarizing scattered references on intellectual disability it is clear that genetic factors (*beejadosha*), improper diet (*apathya*), suppression of natural urges (*vegadharana*) and gynecological disorders (*yonidosha*) during pregnancy play important role in the development of fetal disorders (*garbhavikrati*) and mental disorders (*manasikvikara*)<sup>5</sup>. According to Indian thoughts, *mana* (mind) is one of the major operational concepts in the process of learning and the cause of *boudhikaksamata*(entanglement/attachment). *Mana* has dimension which is *anu*(beyond atom in its minutest aspect), and is capable

of remaining *atindriya*(beyond sensory perception)<sup>6</sup>.

*Mana (Psyche)* is an instrument of all our experiences. The chief functions of *Manasare* assimilation and discrimination. The strength of *Indriyasis* derived from the *Mana*. According to *Chakrapani*, the chief functions of the *Manaare* *ichcha* (desire), *dvesha* (hatred), *sukha* (pleasure), *duhkha* (pain) and *prayatna* (effort)<sup>7</sup>.

According to *Charaka*, thinking, judgment, argument and conclusion are the objects of mind. The modern physiology also accepts these functions of mind, which is the aggregate of thinking, judgment and conclusion. It directs and controls the senses and helps to control one when one is getting away from right thinking, imagination and ideation. Though Ayurvedic literature does not describe it clearly as a separate disease entity, it throws light on the aetiopathogenesis, presentation, along with prophylactic and some specific measures for management of such disorders.

### **Etiopathogenesis**

As separate description of '*boudhikaksamata*' has not been described in any of the classics, only indirect and scattered information about the etiology of this disease can be found. These causes can

be classified as – *Nijanidana*(inherited cause) and *Agantujanidana*(Acquired cause). Out of these *Nijanidana*(inherited cause) again may be classified as *sahaja*(genetic), *garbhaja*(congenital) and *janmottara*(post natal).

□ **Sahajanidana (Genetic factor)**  
*Acharya Charaka* have described *Buddhi*(intelligence), *medha* and *smriti*(memory) as the properties of *Atma*, *Satmya* and *Satva* during describing six factors responsible to formation *garbha*(fetus). Out of these six factors above mentioned three factors influence the intelligence of a person. Defect in any of these three factors may adversely affect intelligence<sup>8</sup>.

□ **Garbhajanidana (Congenital factor)**  
 These include all the factors affecting the fetus during its development in the womb such as mother's diet etc. Sushruta says that non-fulfillment of longing of pregnant women leads to vitiation of biological factors mainly *vatadosha* that give rise to specific features responsible for mental retardation<sup>9</sup>

□ **Janmottaranidana (Postnatal factor)**  
 During description of *phakkarogas* *Acharya Kasyapa* has mentioned *jadata*(mental insufficiency), *panguta*(lame) and *Mooka*(dumb) on consumption of

vitiated milk by *tridoshas*<sup>10</sup>. He has also described all the features of various paediatric disorders.

#### **AgantujaNidana (Acquired cause)**

These may be classified under three headings as follows

□ **Sirobhighata (head injury):**  
*Sirobhighata* is usually seen during forceps delivery. Though the incidence rate has decreased due to adaptation of caesarian section but unavailability of obstetrics surgeons in small cities and towns and training of the inexperienced house surgeons is still a cause a lot of trauma to the fetal skull during its delivery by applying forceps. Fall over head is another cause of *Sirobhighata*.

□ **Bhutavesaja (Infections):** *Bhutavesa* or infections to the structures inside the cranium is another cause for *buddhimandya*(mental retardation). e.g., tuberculous encephalitis, meningitis etc. When the infection subsides by treatment the affected part which is damaged will cause permanent disabilities of intellectual functions.

□ **Visajanya (Toxic):** Poisons taken internally will affect the brain structures and cause impaired intellectual capabilities leading to *mandabuddhitva*. It has been

proved that drugs like 'barbiturates, opium' etc. impairs mental as well as intellectual states. But the impairment is comparatively less in severity.

Thus, pathogenesis of mental retardation can be described as -

The *manas* and *buddhi* are derived from *atma* and *satvaja* Bhava. Their qualities depend upon the deeds of the previous birth and the ratio of *satva*, *rajas* and *tamas* guna at the time of fertilization. The higher concentration of *tamas* guna either due to previous karma or other conditions at the time of fertilization can have an impact on the normal physiology of *buddhi*, resulting into its hypo functioning and the affected foetus is born mentally deficient. This condition is also possible in case of abnormality of *bija*, *bijabhaga* or *bijabhaga* aavayava especially the part which is responsible for *buddhi*.

Various etiological factors like dishonored longings of a pregnant woman, excessive consumption of *vata* vardhaka ahara, intake of alcohol, excessive sleeping by a pregnant lady vitiate the *doshas* (the *vata* dosha mainly). This provoked *Vata* either directly reaches the fetal heart through umbilical cord or may form an *avarana* (covering) which vitiates

*Kapha* present in fetal heart. Thus, *Vata* along with *Kapha* obstruct the functions of entities having their seat in the heart such as *manas*, *buddhi*, *pranavayu*, *udanavayu*, *sadhaka pitta*, *alochaka pitta* (*buddhivaisesika*) and *oja*. The hypo function of all these entities and higher concentration of *tamas* guna can manifest into the hypo functioning of *buddhi*. During delivery, if there is any trauma especially on head (seat of *Indriya*) it may cause hypo functioning of the *buddhi*. In the postnatal period, *Kapha* milk feeding to a child provokes the *Kapha* dosha and this aggravated *Kapha* creates obstruction in them *manovahasrotas* in the heart which is the seat of *buddhi* and its functional units. It results into the impaired genesis of knowledge causing *boudhikaksamta* (intellectual disability) in a child.

#### **Clinical Manifestations:**

Early diagnosis of intellectual disability facilitates early intervention, identification of abilities, realistic goal setting, easing of parental anxiety and greater acceptance of the child in the community. Most children with intellectual disability first come to the pediatrician's attention in infancy because of dysmorphisms, associated developmental disabilities, or failure to meet age-appropriate developmental milestones.

There are no specific physical characteristics of intellectual disability, but dysmorphisms may be the earliest signs that bring children to the attention of the pediatrician. They might fall within a genetic syndrome such as Down syndrome or be isolated, as in microcephaly or failure to thrive. Associated developmental disabilities include seizure disorders, cerebral palsy, hypotonia, and autism; these conditions are seen more commonly in conjunction with intellectual disability than in the general population.

## MANAGEMENT

In modern medicine line of treatment include counselling, psychotherapy, play therapy, occupational therapy etc while in *Ayurveda* management is divided into two parts:

### Preventive aspects

They can be further subdivided into –

□ **Before conception** - In *Ayurveda*, the consanguineous marriage has been prohibited, not only by *Charaka*<sup>11</sup> and *Susruta*<sup>12</sup>, but even modern sexologists and biologists have described it. *Acharya Bhela* has clearly mentioned that to prevent the mental disorders the consanguineous marriage should be avoided<sup>13</sup>. Before going for conception the *Acharyas* have prescribed an extensive and

exhaustive list of restrictions and rules for a woman which may affect the child psychology<sup>14</sup>. To have a healthy and intelligent progeny they should be followed strictly.

□ **Prevention during Pregnancy** – In the context of *Garbhopaghatakarabhavas Acharya Charaka* has advised to avoid various dietetic regimens, habits and trauma otherwise they can lead to absorption of birth of a child and various psychological disorders e.g. excessive sleep. An excessive consumption of alcohol by a pregnant woman may deliver an idiot with poor memory or hyper activated or mentally impaired child<sup>15</sup>. In the fourth month of pregnancy, the fetus heart which is the seat of consciousness, becomes active hence it expresses its desires through the mother, this state is called *dauhrda*(16). The wishes and desires of *Dauhrdiniif* not honored and gratified may lead to various congenital abnormalities.

□ **Prevention during Delivery**- During the second stage of labour, *Susruta* has pointed out that on not following the instructions for bearing down the pains by an *Asannaprasava* women may lead to congenital abnormalities which will terminate into psychological abnormality<sup>17</sup>.

□ **Prevention during the neonatal period of child** - In this respect, in *Ayurvedic Neonatology*, there are two terms viz. *Jatamatra* (new born) and *Jatakarma* (ceremony). Just after birth first measure to protect child and his or her respiration by *pranapratyagamana* (resuscitation) method in the form of cleaning of mukhasleshama and physical stimuli along with *pranavayu* (oxygen) with the help of *Krishanakapalikashurpa* (hollow tube) with the aim to prevent the birth asphyxia which is a common cause for mental abnormality<sup>18</sup>. Further, the *Acharyas* have also described various other necessary methods to prevent the physical and mental disorders. They are *raksakarma*<sup>19</sup> (protective measure), *dhupana karma*<sup>20</sup> (fumigation) etc. Various *dharana* drugs (ornamental medicine) have been mentioned to improve the *ayu* (age), *medha* (intellect) and *smriti* (memory). After establishment of the respiration in a neonate *Jatakarma* (ceremony) is performed with *madhu* (honey), *ghrta* and *swarna* (gold) in unequal proportion with chanting of the *Vedic mantras* to the child for promoting *medha* and *bala*<sup>21</sup>. The basic aim behind this *Jatakarma* (ceremony) is to stimulate the intellectual

Ability and immune system of the child from the very neonatal period.

### Specific Treatment:

In *Ayurveda*, various remedies have been described by the *Acharyas* to improve the mental ability. *Acharya Charaka* mentions that *Mandukaparni*, *Guduchi*, *Yashtimadhu* and *Shakhapushpi* are wholesome for intellect and among them *Shakhapushpi* is the drug par excellence<sup>22</sup>. *Acharya Kasyapa* has mentioned some lehas viz. *Kalyanakaghrita*, *Brahmighrita*, *Pancagavyaghrita*, *Samvardhanaghrita*<sup>23</sup>.

*Acharya Vagbhata* has advocated four yoga's to promote the *medha* (intellect), *bala* (strength) and *varna* (color) of a child<sup>24</sup>. They are as under –

- Fine powder of *Swarna* with *Ghrta*, *Vacha* and *Kusta*.
- *Matsyaksi*, *Swarna*, *Vacha*, *Ghrta* with *Madhu*.
- *Arkapuspi*, *Ghrta*, *Swarna* and *Vacha* with *Madhu*.
- *Swarnachurna*, *Kaidarya*, *Swetadurva* and *Ghrta* with *Madhu*.

*Acharya Susruta* opines that continuous practice of learning also improves *medha*



and buddhi. This principle of Susruta can be very fruitful for the mentally deficient child in form of special education and teaching. Apart from these drug therapies there are certain other methods of improving the memory about which *Acharyas* have discussed in different contexts such as *Abhyasa*(continue practicing), *samadhi* and *yoga*. All these sharpen the memory and elevate the level of buddhi. This principle of Susruta is very much important and is a fundamental factor behind all the learning processes.

## CONCLUSION

On the above basis it is concluded that Ayurveda enumerates various etiological factors which on derangement at time of embryogenesis cause to develop mental retardation that manifests at the time of prenatal, natal, post natal stages. Mental Retardation refers to subnormal general intellectual functioning and is associated with impairment in either learning and social adjustment or maturation or both. Medical treatment of Mental Retardation has offered little hope for its total or even partial alleviation. Ancient *Acharyas* have laid much emphasis on the prevention of mental disorder and promotion of mental health

under the topic '*MedhyaRasayana*Therapy'. Under this therapy, they have classified many drugs like *Vacha*, *Yashtimadhu*, *Mandukparni*, *Shankhpushpi*, to mention a few in promoting mental development and alleviating mental illnesses as well. By adopting such measure we can protect to our coming progeny. Thus, Ayurveda may play an important role in the management of Intellectual disability.



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