



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

R.C.Harinkhede<sup>1\*</sup>, D. B. Chavan<sup>2</sup>, P.L. Patil<sup>3</sup> and V.U.Gawai<sup>4</sup>

<sup>1,2,3,4</sup>Dept. of Kaumarbhritya, Govt. Ayurved College Nanded, Maharashtra, India

### 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, Beejadosha, Garbhavikruti*



**Greentree Group**

Received 27/09/15 Accepted 23/10/15 Published 10/11/15

## 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 dose not describe it clearly as a separate disease entity, it throws light on theaetiopathogenesis, 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 Charak* 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 *vata dosha* 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):**

*Bhutavesaja* 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 *atmajā* and *satvaja* Bhava. Their qualities depend upon the deeds of the previous birth and the ratio of *satva*, *rajas* and *tamasguna* at the time of fertilization. The higher concentration of *tamasguna* 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 *bijabhagaavayava* especially the part which is responsible for *buddhi*.

Various etiological factors like dishonored longings of a pregnant woman, excessive consumption of *vatavardhakaahara*, 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 *tamasguna* 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 *Kaphadosha* 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 *Acharyashave* 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

*Krishanakapalishurpa*(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

*yogas* 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 '*Medhya Rasayana 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.





## REFERENCES

1. Wilmshurst, Linda (2012). "General + learning+ disability" clinical and educational child psychology an ecological- transactional approach to understanding child problem and interventions. Hoboken Willey. p.168.
2. "Rosas law", Washington, D.C.: U.S. G.P.O. 2010. Retrieved 13 September 2013
3. *American Psychiatric Association: Diagnostic and statistical manual of mental disorders, fourth edition, text revision, Washington, DC, 2000, American Psychiatric Association, p 49, reprinted by permission..*
4. Intellectual developmental disorders, towards a new name, definition and framework for mental retardation/intellectual disability in ICD-11. *World Psychiatry*, 3(10), 2011, 175–18.
5. *Bhel Samhita* edited by Girija Dayalu Shukla, Reprint edition, Sharirasthana, Verse no.3/2-4 Chaukhamba Bharati Academy, Varanasi, India, 1999.
6. Narayana Reddy GN, Ramu MG, Ventkataram BS, *NIMHANS Journal*, 5(2), 1987, 22-29.
7. Charka, Charaka Samhita edited by Pt. Kashinath Shastri and Dr. Gorakhnatha Chaturvedi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sutra sthana, verse No. 1/49 Chaukhamba Bharati Academy, Varanasi, India, 2008.
8. Charka, Charaka Samhita edited by Pt. Kashinath Shastri and Dr. Gorakhnatha Chaturvedi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sharirasthana, verse No. 3/5 Chaukhamba Bharati Academy, Varanasi, India, 2008.
9. *Sushruta Samhita* edited by Kaviraj Dr. Ambika Dutta Shastri with Hindi Commentary Ayurved Tatva Sandipika 12th edition, Volume –I Sharirasthana, Verse no. 2/51, Chaukhamba Sanskrit Sansthan.. Varanasi, India, 2001.
10. *Kasyapa Samhita*, edited by Sri Stayapala Bhisgacharya with Hindi commentary Vidyotini, 10th edition, Chikitasasthana, phakkachikitsa adhyaya, Verse no.4-5, Chaukhamba Sanskrit Sansthan, Varanasi, 2005.
11. Charka, Charaka Samhita edited by Pt. Kashinath Shastri and Dr. Gorakhnatha Chaturvedi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sharirasthana,



and verse no. 2/3 ChaukhambhaBharati Academy, Varanasi, India, 2008.

12. SushrutaSamhita edited by KavirajDr.AmbikaDuttaShastri with Hindi Commentary AyurvedTatvaSandipika 12th edition, Volume –I Sharirasthana, Verse no. 10/10, Chaukhamba Sanskrit Sansthan. Varanasi, India, 2001.

13. Anonymous, BhelSamhita, edited by GirijaDayaluShukla, reprint 1999, ChaukhambhaBharati Academy, Varanasi, sharirasthan

14. Charka, CharakaSamhita edited by Pt. KashinathShastriandDr.GorakhnathaChaturv edi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sharirasthana, Verse No. 8/6 ChaukhambhaBharati Academy, Varanasi, India, 2008.

15. Charka, CharakaSamhita edited by Pt. KashinathShastriandDr.GorakhnathaChaturv edi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sharirasthana, Verse No. 8/21, ChaukhambhaBharati Academy, Varanasi, India, 2008.

16. SushrutaSamhita edited by KavirajDr.AmbikaDuttaShastri with Hindi Commentary AyurvedTatvaSandipika 12th edition, Volume –I Sharirasthana, Verse no. 2/51, Chaukhamba Sanskrit Sansthan. Varanasi, India, 2001.

17. SushrutaSamhita edited by KavirajDr.AmbikaDuttaShastri with Hindi Commentary AyurvedTatvaSandipika 12th edition, Volume –I Sharirasthana, Verse no. 10/11, Chaukhamba Sanskrit Sansthan. Varanasi, India, 2001.

18. Charka, CharakaSamhita edited by Pt. KashinathShastriandDr.GorakhnathaChaturv edi with Hindi Commentary Vidyotini, Reprint edition, Volume- I, Sharirasthana, Verse No. 8/42, ChaukhambhaBharati Academy, Varanasi, India, 2008.

19. SushrutaSamhita edited by KavirajDr.AmbikaDuttaShastri with Hindi Commentary AyurvedTatvaSandipika 12th edition, Volume –I Sharirasthana, Verse no. 10/23, Chaukhamba Sanskrit Sansthan. Varanasi, India, 2001.

20. Vagbhatta, AstangaHridaya edited by KavirajAtridev Gupta with Hindi commentary Vidyotini, Reprint edition, Uttara Tantra, verse no. 1/25-28, Chaukhambha Sanskrit Sansthan, Varanasi, India, 2005.

21. SushrutaSamhita edited by KavirajDr.AmbikaDuttaShastri with Hindi Commentary AyurvedTatvaSandipika 12th edition, Volume –I Sharirasthana, Verse no. 10/15, Chaukhamba Sanskrit Sansthan. Varanasi, India, 2001.

22. Charka, CharakaSamhita edited by Pt. KashinathShastriandDr.GorakhnathaChaturvedi with Hindi Commentary Vidyotini, Reprint edition, Volume- II, Chikitasasthana, verse No. 1-3/30-31 ChaukhambhaBharati Academy, Varanasi, India,2008.

23. KasyapaSamhita, edited by Sri StayapalaBhisgacharya with Hindi commentary Vidyotini, 10th edition, Sutra sthana, lehaadhyaya, Chaukhambha Sanskrit Sansthan, Varanasi, 2005.

24. Vagbhata, AstangaHridaya edited by KavirajAtridev Gupta with Hindi commentary Vidyotini, Reprint edition, Uttara Tantra, verse no. 1/47-48,Chaukhambha Sanskrit Sansthan, Varanasi, India, 2005