

Evaluation of Prenatal, Postnatal and Neonatal Causes as the Risk Factors for Patients with Different (IQ) Levels of Mental Retardation

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ABSTRACT

Mental retardation is among the few major disorders that are still poorly understood in terms of etiopathogenesis and for which very little therapeutic help is provided. Mental retardation may be caused by either genetic or environmental factors or a combination of both. Fifty nine patients of idiopathic mental disability were studied from Pt.B.D.Sharma University of Health Sciences Rohtak, Haryana. There were 13.5% mild, 49.2% moderate, 27.1% severe & 10.2% profound cases of mental retardation. Out of these there were 72.88% males & 27.11% females. All of these patients were with low socio-economic status and illiterate background. Age group range of 11-20 years has highest frequency (47.457%) of mental disability in all categories. In mild group prenatal, postnatal & neonatal risk factors were found in two, five & four respectively. Among moderate group 18 patients were with prenatal risk factors, 19 with postnatal, 24 with neonatal & 2 patients were without any risk factors. In severe group 9 patients have prenatal, 16 patients have postnatal & 16 patients have neonatal risk factors. In profound group prenatal, postnatal & neonatal risk factors were noted in four, six & six patients respectively.

Key words: Risk Factors, Prenatal, Postnatal, Neonatal, IQ, Mental Retardation.

INTRODUCTION

Mental retardation (MR) is a common disorder, which imposes a large medical, psychological and social burden. It affects about 3% of the population, yet the pathogenesis is poorly understood (Birch et al., 1970¹ and Curry et al., 1997²). Mental disability is described as below average general intellectual function with associated deficits in adaptive behavior that occur before age of 18 (Van et al., 2005³). ICD-10 characterizes mental retardation as condition resulting from failure of mind to develop completely. The degree of impairment of mental retardation has a wide range, it is generally divided into mild (IQ 50-70), moderate (IQ 35-50) and severe (IQ 20-35). Those cases in which the IQ is below 20 are occasionally defined as profound (Battaglia et al., 1999⁴ and Chiurazzi 2000⁵). Epidemiology of mental retardation showed

that 2 to 3% of population has an IQ less than 70. Severe mental retardation has a prevalence of 3.5 per 1000 individual. The prevalence of moderate to severe retardation (IQ<50) is 30 to 55 per 10,000 and mild handicap (IQ 50-70) is present in about 2% of the population (Roeleveld et al., 1997⁶). These categories of mental abnormality are based on scores obtained through use of age standardized tests of cognitive ability (WHO, 1993)⁷. There are several hundred disorders associated with mental retardation. Many of these disorders play a causative role in mental dysfunction. The American association on mental retardation subdivides the disorders that may be associated with mental retardation into three general areas, prenatal causes, neonatal causes and postnatal causes (AAMR, 1992)⁸. Present study has been conducted on patients of mental disability to assess the role of these risk factors

MATERIAL AND METHODS

A specialized questionnaire was developed to record the prenatal, postnatal & neonatal history of the mentally abnormal patients. A sum total of 59 patients were analyzed from Pt. B.D.Sharma University of Health Sciences in the year 2009. These patients were divided into the four different categories on the basis of degree of mental retardation. The IQ of these patients was calculated by using the Senguin's form board test with the help of clinical psychologist. Different risk factors studied are given in Table 2.

RESULTS AND DISCUSSION

Out of 59 patients there were 43 males (72.88%) & 16 females (27.11%) (Table1). In the mild category there were 2 prenatal, 5 postnatal,

& 4 neonatal cases of risk factors. In moderate group there were 18 prenatal, 19 postnatal, 24 neonatal cases whereas 2 cases do not have any risk factors. In severe group 9 prenatal, 16 natal & 10 postnatal risk factors cases were present. In profound category 4 prenatal, 6 postnatal & 6 neonatal risk factors cases were observed (Fig 1). In age group of 0-10 Yrs there were 23.73% cases of mental disability. In 11-20 yrs age group 47.46% cases were present. In 21-30 Yrs of age group percentage of

Table 1: Sex distribution in various categories of mental retardation

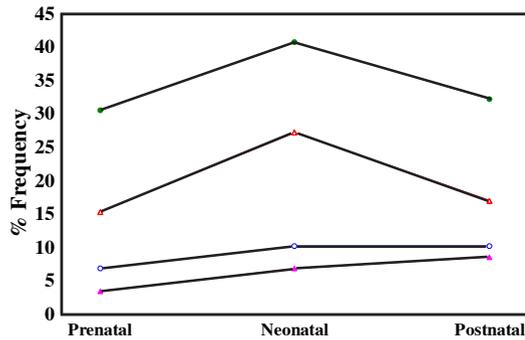
Group of MR	% Frequency of male patients	Frequency % of female patients
Profound	5.08	5.08
Severe	20.34	6.78
Moderate	35.59	13.56
Mild	11.86	1.69

Table 2: Various Risk Factors Taken Under Consideration in Present Study

Prenatal	Neonatal	Post natal
Wanted /unwanted Attempted abortion	Prolonged Labour duration	Infections
Threatened abortion	Respiratory distress	Jaundice
Rh incompatibility	Abnormal presentation	
Diabetes	Birth weight	Convulsions
Nutrition	Delay cry	
Trauma	Colour of the baby	Injury
Hypertension	Respiratory distress	
Jaundice	Infections	Failure to thrive
Infections	Feeding problems	
	Convulsions	Nutritional disorders

Table 3: Distribution of various risk factors in Different categories of Mental Retardation

Risk Factors	Different levels of mental retardation				Total (%)
	Mild	Moderate	Severe	Profound	
Prenatal	2	18	9	4	55.93
Postnatal	5	19	10	6	67.79
Neonatal	4	24	16	6	84.74
Prenatal+ Neonatal+Postnatal	1	5	6	2	23.72



- 1). - Mild mental retardation frequency.
- 2). - Moderate mental retardation frequency
- 3). - Severe mental retardation frequency.
- 4). - Profound mental retardation frequency

Fig . 1: Percentage frequency of risk factors in different categories of mental retardation

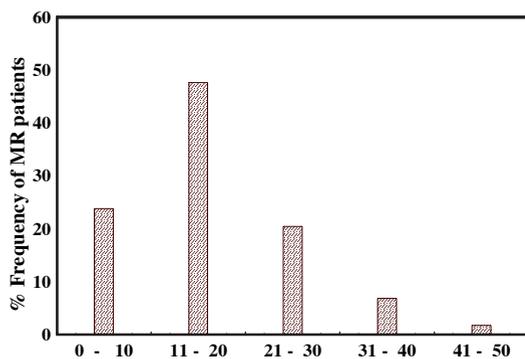


Fig. 2: Percentage frequency of mental retardation patients in different age group categories

mentally challenged persons was 20.35%. In age group 31-40 yrs & 41-50 yrs there were 6.78% & 1.7% patients respectively (Fig. 2).

Role of prenatal, neonatal and postnatal time period in identifying the risk factors for mental retardation has been emphasized only in few studies. However, number of articles reports prenatal screening as well as developmental follow up of neonates. In a Japanese study 15% prenatal, 8% perinatal and 12% postnatal causes were reported. Reason of mental disability was uncertain in 65%. Study from Finland reported prenatal risk factors in 22%, perinatal in 1% and postnatal in 3% cases of mental disability. Uncertain reason was reported in 74% cases (Akiko, 2002).

In the present study, prenatal, neonatal and postnatal clinical history of patients was analyzed in detail. Contributory prenatal risk factors were 55.93%, neo-natal 84.74% and postnatal 67.80%. Causes were uncertain in 3.40% of mental retardation cases.

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