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Clinical Profile And Outcome Of Pneumonia Associated With TraditionalChild Rearing Practices In Infants.

M Pradeep[1], Krithika S[2], and Raju V[3]*.

[1,2]Assistant Professor, Department of Pediatrics, ACS Medical college and Hospital, Poonamallee High Rd, Velappanchavadi, Tamil Nadu, India.
[3]Associate Professor, Department Of Pediatrics, Sri Muthukumaran Medical College, Chikkarayapuram, Near Mangadu, Chennai, Tamil Nadu, India.

ABSTRACT

Customs and traditions are strictly followed in many Indian families, both rural and urban. Certain established child rearing practices are being advocated by elders and are being followed traditionally even today. Many of these practices play a significant role in causing pneumonia in children. This study was undertaken to compare and assess the clinical features and outcome of pneumonia occurring in children with traditional rearing practices and in infants without traditional child rearing practices and various factors influencing them. The present study is a prospective case control study, done in the department of paediatrics, Department of Pediatrics, ACS Medical college and Hospital, Poonamallee High Rd, Velappanchavadi, Tamil Nadu, India which a total of 220 infants with clinical and/or radiological signs of pneumonia were enrolled during the period of March 2022 to February 2023.73 out of 220 infants (33%) with pneumonia had history of traditional child rearing practices. Demographic factors like combined families, young and illiterate mothers, lower socioeconomic status, domiciliary deliveries were found to be statistically significant. Increased clinical severity and prolonged outcome (60.4%) and complications (42.5%) were found to be more in pneumonia in infants associated with traditional child rearing practices. This study showed increased clinical severity and prolonged outcome and more complications of pneumonia in infants associated with traditional child rearing practices. High mortality (7.5%) was also seen. Most common traditional child rearing practices influencing outcome in infants are oil bath and blowing into the nose. Thus there is an urgent need to systematically study the utility, futility and possible dangers of a large number of traditional child rearing practices followed in infants.

Keywords: Traditional child rearing practices, Pneumonia in infants

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Corresponding author

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INTRODUCTION

Traditional practices are time honored rituals and beliefs which are prevalent in a community and they may pertain to a wide range of activities [1]. The customs and cultural practices pertaining to mother craft and child care are passed on from one generation to another [2]. The traditional practices are influenced by the educational level, socio-economic status and value system of the family and society. The conventional or traditional practices have become part and parcel of our life style [3]. They are available at the doorstep of the people and they are readily acceptable to the society.[4] The traditional practices are so ingrained in the minds of people that are difficult to change them easily even when they are identified to be useless or harmful [5]. Customs and traditions are strictly followed in many Indian families, both rural and urban. Certain established child rearing practices are being advocated by elders and are being followed traditionally even nowadays [6]. Certain Child rearing practices appears to play a significant role in causing pneumonia in children [7]. This study was undertaken to assess the clinical profile and the outcome ofpneumonia following those traditional child rearing practices in infants.

MATERIALS AND METHODS

The present study is a prospective case control study, done in the department of paediatrics, Department of Pediatrics, ACS Medical college and Hospital, Poonamallee High Rd, Velappanchavadi, Tamil Nadu, India which a total of 220 infants with clinical and/or radiological signs of pneumonia were enrolled during the period of March 2022 to February 2023.The study group included the infants in the age group of 29 days to 1 year who showed clinical and radiological evidence of pneumonia and having history of traditional child rearing practices done. The control group included the infants in same age group admitted with clinical and radiological evidence of pneumonia and with no history suggestive of traditional child rearing practices.

Inclusion Criteria

All infants admitted with pneumonia in age group 29 days to 1 year during the studyperiod.

Exclusion Criteria

Neonatal period. Babies institutionally delivered and admitted for some ailments during neonatal period andbeyond, without discharging them. Infants with known history of wheezing. Children predisposed to pneumonia like left to right shunting, congenital malformations etc. Children with systemic disorders causing respiratory distress like cardiac, renal, central nervous system or metabolic problems. Infants with clinical and radiological evidence of pneumonia were selected as per the selection criteria. After eliciting necessary history some children were excluded using exclusion criteria.

Detailed questionnaire including various traditional child rearing practices like, Oil bath, oil instillation into nose, ear and mouth, blowing into the nose, mouth to mouth suctioning, Finger-mouth suctioning, application of irritant myrrh / sambirani fumes and giving native medications, was prepared and the accompanying person with the infant was asked. All necessary investigations were done. X-rays were analysed during admission for evidences in the form of bronchopneumonia, patchy opacities, consolidation, pneumatoceles, and pyothorax. Further details of family which may influence the disease outcome like type of family, religion they follow, socio-economic status, antenatal care during pregnancy, place of delivery and feeding practices were also obtained. Nutritional status was assessed using ICMR chart. The clinical parameters used are duration of fever after admission, if present earlier, duration of significant respiratory distress i.e. Downe score >3, duration of difficulty in taking usual feeds, requirement of supplemental O_2, IV fluids and ICU setting care, any requirement for II line antibiotics and the clinical outcome. By systematic random sampling technique a total of 80 cases and controls were taken to compare and assess the clinical features and outcome of pneumonia occurring in infants with traditional child rearing practices and in infants without traditional child rearing practices andto assess the various factors influencing traditional child rearing practices and to assess the influence of individual traditional child rearing practices with the outcome of pneumoniaoccurring in those infants.

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RESULTS

Table 1: Demographic Profile Of Traditional Child Rearing Practices

Age group	Total n=240(%)	Group		Significance	
		Study n = 80(%)	Controln = 160(%)		
				2	P
<3 months	102 (42.5)	58 (72.5)	44(27.5)	35.47	0.001
4-6 months	72 (30.0)	16 (20.0)	56(35)		
7-12 months	66 (27.5)	6 (7.5)	60(37.5)		

During the study period, the patient attendance in out patient census was 307543.Out of this, 240 infants had clinical symptoms and signs and with radiological signs of pneumonia. i.e. 7/1000.Out of 240, 80 infants had history of traditional CRP 33%.On analyzing all infants with pneumonia,42.5% infants of <3 months had pneumonia when compared to the age group of 4-6 months (30.0%) and 7-12 months (27.5%) and is statistically significant. In a study by Jayakumar et al (1990) at Institute of child health found that 76% of ARI are bronco pneumonia. Male: female is 1.8:1.3 76.2% are infants. This study however includes allchildren and reveals the common age group infants. Also, traditional CRP is done in 72.5% of <3 months old infants when compared with other age groups and is statistically significant. This may be due to family members visiting the house after delivery and the new mother is afraid of doing those child rearing practices. Also, noisy breathing in early infancy isattributed to colds and in order to relieve this symptom, various CRP are done. In this study, the incidence of the traditional CRP in both sexes shows no significant difference. But earlier studies done by A Balachandran et al, in his study of 131 cases of persistent/recurrent pneumonia, showed that boys are affected twice than girls for which it was attributed that to the fact that male children enjoy a preferential care over the female children.

Table 2: Nutritional Status

NutritionalStatus	Total n=240 (%)	Group		Significance	
		Study N = 80 (%)	Control n = 160 (%)		
				2	P
Normal	69 (28.7)	21 (26.3)	24(30)	2.5	0.65
Grade I	119 (49.5)	45 (56.3)	37 (46.3)		
Grade II	40 (16.6)	12 (15)	14 (17.5)		
Grade III	7 (2.9)	1 (1.3)	3(3.8)		
Grade IV	5 (2.1)	1 (1.3)	2(2.5)		

In this study, nutritional status of the infants has no significant influence on outcome of pneumonia whether they are associated with or without traditional CRP. This may be attributed to more number of cases belonging to Grade I malnutrition and of Normal nutrition.

Table 3: Incidence Of Individual Types Of Traditional Child RearingPractices

Study Group			
Oil Bath	Not Given	50	62.5%
	Given	30	37.5%
Oil Instillation	Not Given	47	58.8%
	Given	33	41.3%
Blowing into nose	Not Given	16	20.0%
	Given	64	80.0%
Mouth to Mouth suctioning	Not Given	3	3.8%

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	Given	77	96.3%
Finger- mouth Suctioning	Not Given	8	10.0%
	Given	72	90.0%
Native medications given	Not Given	13	16.3%
	Given	67	83.8%
Sambirani Fumes	Not Given	12	15.0%
	Given	68	85.0%

In this study, incidences of individual traditional child rearing practices done are as follows:Oil bath (37.5%), oil instillation (41.3%), Blowing into the nose (80%), Mouth to mouth suctioning (96.3%), Finger- mouth suctioning (90%), administering native medications (83.8%), and administering irritant sambirani / myrrh fumes(85.0%). More than one type of CRP is done in most infants. CRP varies from region to region. A Balachandran et al in his study of traditional child rearing practices in children with persistent and recurrent pneumonia Indian Medical Gazette CXXXIV (12); 388-391 1990 has showed that out of 131 children with PRP, Nose blowing was elicited in 90.8% and 61.3% associated with that had radiological pneumonia.

Table 4: Child Rearing Practices Done / Suggested By

CRP done by	**Study Group** n = 80 (%)		**Significance**	
			□2	**P**
Great grandmother	3	3.8%	131.98	0.001
Grand mother	43	53.8%		
Mother	3	3.8%		
Elders nearby	31	38.75%		

This study shows the incidence of pneumonia in infants associated with traditional CRP done or suggested by Grand mother in the family (53.8%) when compared with Great grand mother (3.8%), Mother (3.8%) and the Elders nearby (38.75%) and is statistically significant.

Table 5: Clinical Parameters

		Group		**Significance**	
		Control n = 80 (%)	**Study n = 80 (%)**		
				□2	**P**
Fever up to	nil	5 (6.3)	6 (7.5)	12.8	0.002
	< 48 hrs	74 (92.5)	60 (75)		
	> 48 hrs	1 (1.3)	14 (17.5)		
Respiratory distress score > 3	< 48 hrs	76 (95)	26 (32.5)	67.6	0.001
	> 48 hrs	4 (5)	54 (67.5)		
O2 Supplementation	< 48 hrs	74 (92.5)	25 (31.3)	69.8	0.001
	> 48 hrs	6 (7.5)	55 (68.8)		
Difficulty intaking Feeds for	< 48 hrs	76 (95)	24 (30)	72.1	0.001
	> 48 hrs	4 (5)	56 (70)		
IV fluids needed for	< 48 hrs	74 (92.5)	31 (38.8)	57.1	0.001
	> 48 hrs	6 (7.5)	49 (61.3)		
ICU Care	< 48 hrs	72 (90)	18 (22.5)	74.06	0.001
	> 48 hrs	8 (10)	62 (77.5)		
Complications	no	74 (92.5)	46 (57.5)	26.1	0.001
	yes	6 (7.5)	34 (42.5)		

Requirement of II line Antibiotics	No	70 (87.5)	11 (13.8)	87.4	0.001
	yes	10 (12.5)	69 (86.3)		
Clinical outcome	Death	1 (1.3)	6 (7.5)	3.84	0.05
	Improved	79 (98.7)	74 (92.5)		

On comparing and analyzing the clinical parameters between pneumonia in infants associated with traditional CRP and with pneumonia not associated with traditional CRP it is found that prolonged fever (17.5%), prolonged respiratory distress >3 (67.5%), prolonged need for oxygen supplementation(68.8%), prolonged difficulty in taking feeds (70%), prolongedneed for intra venous fluids (61.3%), prolonged ICU care (77.5%) was found to be associated with pneumonia in infants associated with traditional CRP. On analyzing the complications associated with pneumonia, it is found to be more in pneumonia in infants associated with traditional CRP (42.5%). Requirement of II line antibiotics was more in pneumonia in infants associated with traditional CRP (86.3%) when compared with pneumonia in infants not associated with traditional CRP (12.5%). Death is found more in pneumonia in infants associated with traditional CRP (7.5%) when compared to pneumonia in infants not associated with traditional CRP (1.3%). But majority of the infants has improved in both the groups. This study however indicates increased morbidity pattern of pneumonia in infants associated with traditional CRP. There is no comparable study in this aspect, which clinical parameters in pneumonia are influenced more due to traditional CRP.

Table 6: Multi Variate Logistic Regression For Outcome

	Sig.	**Exp(B)**	**95.0% C.I. for EXP(B)**	
			Lower	**Upper**
Oil bath	.05	9.102	1.1	33.3
Oil instillation	.997	.738	.000	
Nose blowing	.04	3.527	1.103	22.739
Mouth to mouth suctioning	.999	.702	.000	
Finger mouthsuctioning	.103	14.190	.585	344.032
Vasambu	.998	.000	.000	
Sambirani	.990	.978	.031	31.280
Constant	.000	106.815		

On analysis of this study for outcome by Multi Variate logistic regression, Oil bath andBlowing into the nose has greater significance over other types of child rearing practices. Traditional child rearing practices are being done in early infancy, the vulnerable group, irrespective if sex and locality, has hospital visits initially for minor illness like noisy breathing and the practices followed for that. These practices are followed in families irrespective of the religion they follow. Nuclear family employs some elderly persons nearby but in combined and joint families grandmother has the influence mostly on these child rearing practices. Mother being young and having less literacy has more influence on performing these practices as they lack knowledge about the harmful effects. Families belonging to lower socio-economic status engage more in these practices. Knowledge about the health care providers of ante natal care and the deliveries influencethese practices to reduce as these are the areas that the mother and the family has some motivation not to perform those practices. Oil instillation into nostrils is associated with risk of development of lipoid pneumonia due to aspiration, which needs prolonged follow-up. Native medications prepared unhygienically and given to infants after bath, which were believed to cure phlegm and to keep the infant well by aiding digestion. They are given when they cry vigorously and they tend to aspirate Sambirani (myrrh) fumes act as an irritant and cause increase in tracheo-bronchial secretions and they tend to aspirate while crying vigorously. These fumes itself are likely to cause hypersensitivity pneumonitis. Infants admitted with pneumonia usually has fever, though fever is not well pronounced in young infants as they can present with hypothermia and in those partially treated outside with antibiotics and anti pyretics.

DISCUSSION

Traditional child rearing practices are being done in early infancy which is the vulnerable group,

irrespective of sex and locality, they have hospital visits initially for minor illness like noisy breathing and practices are followed thereafter [8]. These practices are followed in families irrespective of the religion they follow. Nuclear family employs some elderly persons nearby but in combined and joint families' grandmother has most of the influence on these child rearing practices [9]. Mother being young and less literate has more influence on performing these practices as they lack knowledge about the harmful effects. Families belonging to lower socioeconomic status engage more in these practices. Knowledge about the health care providers in terms of ante natal care and the deliveries influence these practices to reduce as these are the areas that the mother and the family has some motivation not to perform those practices [10] Oil instillation into nostrils is associated with risk of development of lipoid pneumonia due to aspiration, which needs prolonged follow-up.[11]. Most of the previous studies showed male child preponderance, lower socioeconomic standards, low Infants admitted with pneumonia usually have fever, though it is not well pronounced in young infants as they can present with hypothermia similar to those partially treated outside with antibiotics and antipyretics [12]. Fever when prolonged in spite of appropriate treatment may be due to severe infection, drug resistant and atypical organisms. Respiratory distress at the time of admission was assessed with Downe's scoring in which respiratory rate, chest retractions, grunt, cyanosis and air entry was taken into account and was used during the course of treatment in the ward [13]. Those infants who had only fast breathing were taken as improved. Oxygen supplementation was given to infants with significant respiratory distress [14]. Infants, who had difficulty in taking usual feeds due to illness, were given appropriate IV fluids for the period of requirement. Those who had improved were started on partial IV fluids, guarded feeds with cup and spoon or palladai. Sick looking infants and ones with intermittent respiratory distress were observed for more time in the ICU [15]. Infants who developed septicemia, seizures, shock, empyema and pneumothorax during the illness were taken as complications of the disease and were managed appropriately [16]. Change of antibiotics from I line to next line of antibiotics was done in infants with complications. Though most cases of pneumonia improved well the mortality appeared to be more in pneumonia cases following traditional child rearing practices [17]. Overall morbidity in these infants is more when compared to infants with pneumonia not followed by traditional child rearing practices [18]. There is no comparable study in the aspect where the clinical parameters in pneumonia are influenced more by traditional child rearing practices, which is seen in this study [19]. The current study is limited to the age group of infants only whereas traditional child rearing practices in the neonatal period have also been attributed to different conditions. This study is also limited to pneumonia in infants but involvement of skin, GIT, CNS has also been found in many conditions attributed to traditional child rearing practices in both infants and neonates.[20]

REFERENCES

[1] A Balachandran et al. Traditional child rearing practices in children with persistent and recurrent pneumonia. Indian Medical Gazette CXXXIV (12); 388-391 1990.

[2] Gupta ML, Mathur PS et al. A review of child rearing practices prevalent in the families of hospitalized children at Gwalior, Indian Pediatrics 1980;17: 261.

[3] Shukla R.S, Bhambal S.S. Bhandari W.B; study of superstitious practices in under fives. Indian Pediatrics 1979;16:403

[4] Mathur GP Kushuwala KP. Superstitions in pediatric practices, editorial. Indian pediatrics 1976; 23; 159.

[5] Kushwaha K.P Mathur S. Singh. Y.D Seti. T.R, - Superstitious therapy during illness of pre- school children Indian Pediatrics 1986;23;163-168.

[6] Krishnamurthy, Rajagopal T. Folklore and child rearing practices in South India- Current topics in pediatrics P.507 interprint

[7] Sharma M. Madhulika, Kabra S.K. Vani S.N. Review of traditional practices in neonatal care in south east asia with special reference to India. Report and recommendations of National workshop on traditional practices of neonatal care in India. Ahmedabad. National Neonatology forum and Ministry of Health and Family welfare Government of India 1991;47-64

[8] Natu M. Review of Traditional practices and of Maternal and child care in Maharashtra In: Report of National seminar on Traditional practices in mother and child care New Delhi. National Institute of public co-operation and child development New Delhi 1989; 80-89

[9] Gopaldas T. Review of Traditional practices and of Maternal and child care in New Delhi. Report of National seminar on Traditional practices in mother and child care New Delhi. National Institute of public co- operation and child development New Delhi 1989;42-68

[10] Singh K.J. Review of Traditional practices and of Maternal and child care in Manipur. Report of National seminar on Traditional practices in mother and child care New Delhi. National Institute of public co- operation and child development New Delhi 1989;69-79

[11] Saxena VB. Review of Traditional practices and of Maternal and child care in Madhya Pradesh. Report of National seminar on Traditional practices in mother and child care New Delhi. National Institute of public co-operation and child development, New Delhi 1989;23-41
[12] Mahadevan. S, Anantha Krishnan S., Srinivasan S., Lipoid pneumonia in South Indian Infants. Indian pediatrics 1991;28: 1529 – 1530.
[13] Balakrishnan S. Lipoid pneumonia in infants and children in South India. Br Med J 1973; 4: 329-331.
[14] Adhisivam B, Mahadevan S. Oil that spoils the child. Indian J Pediatrics2006; 73:544-544.
[15] Furuya ME, Martinez I, Zuniga-Vasquez G, Hernandez Contreras I.Lipoid pneumonia in children: Clinical and imageological manifestations. Arch Med Res 2000; 31 : 42-47.
[16] Robbins S.L. Cotran RS, Kumar V, Pathologic basis of disease, 7th edn. 2003:479-80.
[17] Epidemiology of Diseases, Edited by Miller, D.L. and Farmer, R.D., Blackwel Scientific Publications.
[18] John T.J. cherian T. Respiratory viral infection in children, NADHI 1989 Jan, 7-9.
[19] Ray CG, Holberg CJ, Minnich LL, et al: Acute lower respiratory illness during the first 3 years of life: Potential roles for various etiologicagents, Pediatr Infect Dis J 12:10, 1993.
[20] Peter G: The child with pneumonia: Diagnostic and therapeutic considerations. Pediatr Infect Dis J 7:453:1988.