Study of Morbidity Pattern of Diseases Under Imnci in 0 - 2 Month Age Group in Urban Slums of Raipur City, Chhattisgarh

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ABSTRACT *Introduction* Every day so many newborn& infant die around in India, mostly from preventable causes. Due to high neonatal mortality and morbidity in the country, the Government of India adopted IMNCI- aiming to reduce its newborn and infant mortality burden.

Methods A retrospective, observational study of 411 infant of 0-2month age group, detail history regarding primary care of newborn, temperature maintenance, breast feeding practices, jaundice, signs of sepsis & vaccination obtained to approach morbidity pattern.Results were analyzed statistically using 95% confidence interval.

Result Most of the deliveries (56%) were still conducted at home,five cleans were opted in only 45%, but in most of the deliveries (78.8%) clean blade was used to cut the cord.In home delivery 52.4% newborns were hypothermic by maternal perception.Most of the babies (59.7%) were breastfed within 4 hours of birth&67.8% newborns were having signs of sepsis.

Conclusion Low socioeconomic condition, harmful child rearing practices and poor healthcare delivery system are the main reason for poor healthcare seeking behaviour and morbidities among infant of urban slums of Raipur City.

Introduction

Approximately 28% of all deaths of newborns and 23% of all infant deaths in the world occur in India. . Every day so many newborn & infant die around in India, mostly from preventable causes. Therefore it is necessary for the mother and her family to understand these aspects of childbirth and newborn care and be prepared to react for the potential dangers signs. Due to high neonatal mortality and morbidity in the country, the Government of India adopted the strategy to be called Integrated Management of Neonatal and Childhood Illness (IMNCI) aiming to reduce its newborn and infant mortality burden. This strategy concentrated on various aspects of early detection and prompt management of   neonatal & childhood illnesses in addition to nutrition, immunization and other important essentials of disease prevention and health encouragement. The World Health Organisation's (WHO) guidelines for essential newborn care include the following: hygiene during delivery, keeping the newborn warm, early initiation of breast-feeding, exclusive breast-feeding, care of the eyes, and care during illness, immunisation and care of low birthweight newborns[1,2].

Chhattisgarh is one of youngest state of India. Raipur city covers most of urban slum of Chhattisgarh. Therefore, we undertook this study in slum of urban population with the following objectives: to study the morbidity pattern of diseases under IMNCI in   0-2 month   & to know various traditional practices performs.

Material & methods

Type of study - A retrospective, observational study of 411 children in 2month -5yr age group. *Place of study* - various slums of Raipur city. Period-1 year from September 2012-september 2013. *Inclusion criteria*-all children of 0- 2 month age group, who are permanent residents of slums.

Exclusion criteria - children more than 2 month, children of guests and relatives from other places.

The study was initiated with approval of institutional ethical committee and written informed consent of parent was obtained prior to enrolment. For the infant recruited to the study, detailed history and clinical examination were recorded in a pre-designed proforma, including all signs listed in IMNCI algorithm. In addition, certain signs not included in generic IMNCI algorithm but considered important for sickness in 0-2 months age group, particularly in 0-7 days age. severity of undernutrition were assessed by anthropometry . Detail history were obtained by interviewing mothers to reveal the knowledge and practice regarding newborn care which include different questionnaires including   primary care of newborn, temperature maintenance, breast feeding practices, jaundice, signs of sepsis & vaccination were obtained to approach morbidity pattern according to IMNCI.

Results were tabulated & analyzed statistically using 95% confidence interval for every parameter.

Result

In our study 65% (95% CI 0.60-069) of subjects belong to families with grade IV socioeconomic status according to modified Prasad classification, most of the parents (54%) being illiterate (95% CI 0.49-0.58).

In 0-2 month age group 50.2% were found to be FTT according to IAP classification (CI 0.45-0.54) while only 28% were referred for severe malnutrition (CI 0.23-0.32) in 0-2 month age group 41% male subjects in grade I PEM according to IAP classification (95% CI-0.49-0.58).

Table 1 showed Most of the deliveries (56%) were still

conducted at home (CI-0.51-0.60) and all five cleans were opted in only 45% (CI-0.40-0.49), in most of the deliveries (78.8%) clean blade was used to cut the cord (CI-0.75-0.82). In 56% deliveries some or the other type of substance was applied on umbilical stump (CI-0.54-0.58); most of the babies (93%) cried immediately after birth (CI-0.90-0.95) and the ones who did not cried immediately, most common practice to make them cry was 'slapping on feet' in 80% (CI-0.76-0.83).

Table 1 Distribution of cases according to primary care

Place of delivery conduction				Status of clean opted			
Place	No.	%	95% CI	Clean opted	No.	%	95% CI
Hospital	181	44	0.39-0.48	Yes	184	45	0.40-0.49
Home	230	56	0.51-0.60	No	227	55	0.50-0.59
Distribution of clean opted in delivery				Application of substances on card stump			
Type of clean				Application on card			
Clean thread	299	72.7	0.68-0.77	No application	181	44	0.39-0.48
Clean blade	324	78.8	0.75-0.82	Oil	123	30	0.26-0.34
Clean surface	199	48.4	0.43-0.52	Turmeric	58	14	0.10-0.17
Clean card	211	51.3	0.46-0.55	Others	49	12	0.08-0.15
Clean hand	292	71.0		Total	411	100	

Only 47% newborns were fully covered (CI-0.43-0.51) and only 24% were kept in contact with mother (CI-0.19-0.28), most of the babies (57%) were given bath immediately (CI-0.52-0.61). In home delivery 52.4% newborns were hypothermic by maternal perception (CI0.51-0.53), hot water was used in 96% far firth baby bath (CI-0.94-0.97)**(Table 2).**

Table 2 Distribution of cases according to temperature maintenance

Cases according to hypothermia				Status of mother bay contact			
Hypothermia	No.	%	95% CI	Kept in contact	No.	%	95% CI
yes	78	19	0.15-0.22	Yes	99	24	0.19-0.28
No	333	81	0.77-0.84	No	312	76	0.71-0.80
Way of covering the baby				Time since bath for first bath			
Head covered	8	2	0.006-0.03	Immediately	234	57	0.52-0.61
Head+ body	193	47	0.42-0.51	12-24 hrs	116	28	0.23-0.32
Only body	206	50	0.45-0.54	24-48 hrs	35	9	0.06-0.11
Not covered	4	1	0.004-0.02	48-72 hrs	26	6	0.03-0.08
Frequency of bath							
Daily	120	29	0.24-0.33				
Alternate day	259	63	0.58-0.67				
once a week	32	8	0.05-0.10				

Table 3 showed Colostrum was given to newborns in 50.4% of hospital deliveries (CI-0.46-0.55) and only in 19.7% of home deliveries (CI-0.16-0.23). Most of the babies (59.7%) were breastfed within 4 hours of birth (CI-0.55-0.64) and thereafter 68.6% were fed 'on demand' (CI-0.64-0.73) 57% were exclusively breast fed (CI-0.52-0.61) most common reason cited regarding problems in breastfeeding was 'stopping of milk production after few days in 43% (CI-0.38-0.47). Cow's milk was most commonly (31%) used as 'top feed (CI-0.26-0.35).

Table 3 Distribution of cases according to feeding practices

Time of first feed				Status of exclusive breast feed			
	No.	%	95% CI		No.	%	95% CI
Immediately	164	39.8	0.35-044	Yes	234	57	0.52-0.61
4 hrs	245	59.7	0.55-0.64	no	177	43	0.38-0.47
1 day	2	0.5	0.002-.012				
Frequency of breast feeding				Type of top feed			
On demand	282	68.6	0.64-0.73	Cow milk	127	31	0.26-0.35
Every two hrs	83	20.2	0.16-0.23	Formula milk	33	8	0.58-0.67
Till awaken	44	10.7	0.07-0.14	Powder milk	17	4	0.22-0.05
Can't recall	2	0.5	0.002-.012	Others	0	0	
Colostrums feeding				Problem related to breast feeding			
Yes	207	50.4	0.46-0.55	No milk in 1st day	64	39	0.31-0.40
No	81	19.7	0.16-0.23	No milk after few day	57	43	0.38-0.47
	123	29.9	0.26-0.34	Inverted nipple	88	12.4	0.08-0.15
				Weak suckling	92	8	0.58-0.67

According to maternal perception only 10% babies were having Jaundice after birth (CI-0.14-0.17) and that to only 6.6% within 3 days of birth (CI-0.05-0.09), out of which only 25% were referred (CI-0.20-0.29)**(Table 4)**.

Table 4 Distribution of cases according to jaundice

Status of jaundice				Referral taken for jaundice			
	No.	%	95% CI		No.	%	95% CI
Yes	67	16	0.14-0.17	Yes	130	25	0.20-0.29
No	344	84	0.82-0.85	No	308	75	0.70-0.79
Time of appearance of jaundice				Taboos for jaundice			
Just after birth	0	0	0.05-0.09	Stopping feeding	50	12	0.08-0.15
3 days after birth	27	6.6	0.07-0.13	Showing sun light	82	20	0.16-0.23
> After 3 days	40	9.8		Hot rod skin banding	41	10	0.07-0.13
				No taboos	238	58	0.53-0.62

Table 5 showed 67.8% newborns were having signs of sepsis (CI-0.62-0.71) with most common sign being 'looking dull' in 32.2% (CI-0.27-0.36), in 29% cases breastfeeding was withheld during sepsis (CI-0.25-0.33). Most of the families (42.8%) are still taking treatment from GP (CI-0.38-0.47), with only 19.4% seeking treatment from Medical Officer (CI-0.15-0.22); 75.95 subjects with sepsis were not referred for treatment (CI-0.72-0.80). 48% subjects in 0-2 month age group had 2 episodes of diarrhea (CI-0.43-0.52) In 0-2 month age group only 10.3% had blood mixed stool suggestive of dysentry (CI-0.07-0.13). Referral for diarrhoea was more (19%) (CI-0.15-0.22) in 0-2 month age group

Regarding vaccination 52% were given OPV_1 (CI-0.47-0.56), 46% subjects were vaccinated with BCG (CI-0.41-0.50), 32.2% with DPT_1 (CI-0.27-0.36) while 14.1% were not vaccinated at all (CI-0.10-0.17).

Table 5 Distribution of cases according to sepsis & diarrhoea

Different Signs of sepsis				Duration of illness			
	No.	%	95% CI		No.	%	95% CI
Off feed	33	8.1	0.05-0.1.	1-3 days	193	47	0.42-0.52
Looking dull	133	32.2	0.27-0.27	4-7 days	82	20	0.16-0.23
Convulsion	11	2.7	0.01-0.05	More than 7 days	29	7	0.05-0.09
Diarrhoea	14	3.4	0.01-0.05	No sepsis	107	26	0.21-0.30
Rapid breathing	52	12.8	0.09-0.16	Type of treatment taken			

Intercostals retraction	13	3.2	0.01-0.05	Oral antibiotics	155	37.6	0.33-0.42
Pustules	11	2.7	0.01-0.05	Iv antibiotics	99	24.1	0.19-0.28
Ear discharge	13	3.2	0.01-0.05	Antipyretics	46	11.3	0.07-0.14
No sign	133	32.2	0.27-0.36	Cannot recall	118	20.7	0.24-0.34
Source of treatment taken				Status of referrals for sepsis			
Angan badi	25	5.9	0.04-0.07	Yes	120	24.1	0.23-0.28
ANM	30	7.4	0.04-0.08	No	309	75.9	0.72-0.80
GP	176	42.8	0.38-0.47	Type of treatment taken for diarrhoea			
MO	79	19.4	0.15-0.22	Ors	165	40	0.35-0.44
No treatment	107			Home based fluid	53	13	0.09-0.16
Episodes of loose motion				Antibiotics	78	19	0.15-0.22
1	144	35	0.06-0.11	Zn preparation	33	08	0.58-0.67
2	197	48	0.43-0.52	Not know	82	20	0.16-0.23
3	41	10	0.07-0.13	Referral for diarrhoea			
4 & above	29	7	0.05-0.09	Yes	78	19	0.15-0.22
				No	333	81	0.77-0.84

Discussion

Home deliveries are still common in Chhattisgarh especially in lower socioeconomic group. Our study was in slums of urban area where facilities for institutional delivery are more available than rural area even then home deliveries were 56 % and in rest were tried at home first but when they could not manage then mothers were taken to nearby hospital for delivery. Experiences of previous deliveries at home of family members may be the reason for preference of home delivery and also decision making process in the family about the place of delivery is important. Similar results were found in other studies Rukhasna Haidar, Manju Rati et al[3,4].

It is not encouraging that all five cleans were opted in only 45%, but in most of the deliveries (78.8%) clean blade was used to cut the cord. In 56% deliveries some or the other type of substance was applied on umbilical stump. This practice of using unsterile substances like oil was similar to the reports from earlier studies done in Nepal and Pakistan[5,6,7]. This practice of using unsterile substances is a important risk factors for sepsis and tetanus.

Rukhasna Haidar et al found that most newborn was fed colostrums similar to our study, insufficient milk production was main reason for non exclusive breast feeding which is more than our study. Percentage of home and hospital delivery in our study is similar to national average but safe delivery and exclusive breast feeding are less, it may be due to lack of feeding advice. Poverty and working mother may be the main contributing factor for less milk production.

Manju Rati et al found that prelactal feed were similar to our study but top feeding was less than our study. Shanty Ghosh et al exclusive breast feeding less than our study, top milk fed were less than this study[8].

P.S Mukharjee et al, exclusive breast feeding is more than this study. Artificial feeding is less then this study. Problem in breast feeding more than our study. in our study Most of the babies (59.7%) were breastfed within 4 hours of birth[9].

Usefulness of early initiation of breast feeding against the risk of neonatal mortality was established in a study in rural Ghana which showed that 16% of neonatal death could be avoided if all infants were breast fed from day 1 and 22% if breast feeding started within 1st hour[10]. So appropriate counseling to the mothers and care givers regarding early initiation of breast feeding is very important.

D K Agrawal found that exclusive breast feeding is more than this study, commercial milk were given as prelactal feed is more than this study. Such practices like prelacteal feeding and giving artificial milk are a cause of concern. Such practices delay the initiation of breast feeding and may adversely affect establishment of lactation[11].

Thermal control of newborn is an essential newborn care. Anderson et al (1993) Johanson et al (2001) Osrin D. et al (2002) Anna Bergstrom et al (2005) conducted a study and found that hypothermia was present in 81% on first day, which is more than our study [12,13]. Kaushik et al (1998), Rajesh Kumar MD et al (1998) found that hypothermia was present in 2.9% of hospital deliveries which is less than our study[14,15]. The incidence of hypothermia varies in different regions and seasons. While promoting the programme for prevention of neonatal hypothermia caution should be given to the specific environmental situation.

We have found that in 52% babies were bathed immediately within one hour of birth it should be discouraged as it can lead to hypothermia. Delayed wrapping may cause hypothermia of just born baby K. Cristensson et al (1988) a study was conducted by UHRC, conducted a study prevention of heat loss in the newborn found that 30.64% neonates were completely wrapped and 8% were not wrapped at all, which is more than our study[16].

Li, A. M et al & Lucy M et al found that development of icterus more than our study , perception of jaundice is less among study population is might be because lack of knowledge & slightly decrease perception of colour in skin. Coleen Kivlahan et al found referrals were similar but icterus were similar to this study[17,18,19].

Anita KM Zaidi et al & Afsheen Ayaz et al (2010) found that rate of neonatal sepsis were less than present study, percentage of ARI & diarrhoea were similar to this study. UHRC (2007-2008) found sepsis; ARI & diarrhoea were less than our study. Treatment taken by unqualified physician more than our study [20,21].

A study conducted by Patowary et al, Govila et al BCG coverage was similar to this study & Vikash Bhatia et al, V.K Desai found better coverage of BCG & OPV1[22,23]. It was encouraging to observe vaccination status better than what seen in national figure,

Variation in result of different study is because of population variation, methodology, and lack of uniformity of variable, availability of health education, information and health care system.

Conclusion

would like to conclude that low socioeconomic condition, harmful child rearing practices and poor healthcare delivery system are the main reason for poor healthcare seeking behaviour and morbidities among infant of urban

slums of Raipur City.

Recommondation

Measures to reduce neonatal mortality in urban slums should focus on health education, improvement of antenatal practices, institutional deliveries, strengthening of government program like 'Janani Suraksha Yojana' & 'Navjat Shishu Shuraksha Karyakram' (NSSK) and active participation of the community.

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