



ACUTE EAR INFECTION : A HIDDEN CAUSE IN CRYING INFANT.

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ABSTRACT

Objectives: Excessively crying infants coming to paediatric OPD is usually a concern for parents. Present study is aim to evaluate ear infections in this infants and also to find out different risk factors associated with ear infections. As young infants have no specific symptoms this risk factors gives strong predictive value for ear infections.

Methods: Otherwise healthy infants between age of 1 month to 1 year coming to paediatric AND ENT OPD. with history of excessive crying were enrolled and evaluated for ear infections. Presence of other symptoms and different risk factors associated with ear infections were observed and analysed.,

Results: Total 280 infants were enrolled out of 163(58%) (p value<0.001, significant) were having ear infection .All infants have other non specific symptoms like excessive irritability, restless sleep and poor feeding. Fever and ear ache was found in very less infants. Lower socioeconomic status, lower maternal education and awareness, faulty feeding practices, lack of exclusive breast feeding, bottle feeding, exposure to indoor house smoking and presence of any form of URI symptoms mainly nasal congestion and watering of eyes were strongly associated (p value<0.001, significant) in infants with ear infections .

Conclusion: Screening of ear infection in excessively crying infants particularly having any of risk factors will help us to reduce complication and morbidity related to this in later life including loss of hearing and delayed speech. As symptoms of ear infections are very unspecific high level of prediction helps us to treat same timely.

KEYWORDS : Acute ear infections, infants, risk factors

Introduction

A cry is the infant's first verbal communication. There are many infants come to regular OPD with complaints of excessive crying. Ear infection is one of the very frequent causes for inconsolable cry in otherwise healthy infant. Acute otitis media is commonest ear infection during infancy. It is said that 50% of children has at least one episode of ear infection up to 24 months of life.(1) Infants with an illness, symptoms may be nonspecific and difficult to identify as they cannot express it and also unawareness of parents. Due to availability of influenza vaccine and pneumococcal vaccine incidence of otitis media decreased in developed countries(2) but developing countries are still facing high burden. It is noted that untreated otitis media during infancy increase risk for recurrent otitis media and complications like hearing loss, delayed speech .(3) There are many studies done for ear infection in children 2 to 5 years but less data available in infants Present study is aimed to identify ear infection in infants and associated risk factors for that.

Materials and method

A prospective observational study was done over period of 1 year in a tertiary care hospital of Ahmadabad. All children between 1 month to 12 month of age coming to paediatric OPD with chief complain of excessive crying were enrolled in study. There are no standard definitions for excessive crying in infants but for this study any infants who were crying more than two hours per day and more than three days per week was considered as excessive crying. Infants with major congenital anomalies, major medical illness were excluded from study. Written informed consent was taken from parents. As per preformed Performa demographic details were taken. All infants were examined for ear infection by otolaryngologist and as per slandered recent guidelines were considered having ear infection if an abnormal, inflamed, tympanic membrane (characterized by mild, moderate, or severe bulging, loss of landmarks, and opacification), and the presence of a middle ear effusion were present. Details of other symptoms like fever, ear ache (as per parent's suspicion), excessive irritability, poor feeding, and

restless sleep were noted. Additional URI symptoms were also assessed -sore throat (by parent's suspicion), cough, nasal stuffiness, runny nose, and watery eyes. Other risk factors like birth weight, socio economic status, detailed feeding practice, maternal awareness, overcrowding, smoke exposures, immunisation status were also noted.

All data were noted and tabulated. Categorical data were compared using Fisher's exact test. Mean differences were compared using Student's t-test. To simplify the calculation in the predictive model, estimated coefficients were rounded to values that were not significantly different from the original estimates

Results

Total 280 infants were enrolled in study.

Demographic data

Out of 280 crying infants 163(58%) were diagnosed having acute ear infections and 117(42%) had other causes. Amongst infants having ear infections 91 (56%) were male and 72 (44%) were females.

Other symptoms

We observed that infants presented with excessive crying with otitis media had other symptoms like irritability (135-83%) poor feeding (116-71%) restless sleep (124-76%). But fever (32-20%) was not common and due to lack of perception may be ear ache was found in only 49(30%) infants. Similarly infants with excessive crying due to other causes also had other symptoms like irritability, poor feeding and restless sleep.(table1)

Risk factors

We have observed different risk factors in infants with ear infections and observed that lower socioeconomic status, low maternal education, improper feeding techniques, lack of breast feeding until 6 months of age, bottle feeding and presence of any symptoms of URI was significantly associated with ear infections.(p

value<0.001).Though we didn't find any strong association with birth weight and overcrowding. Even infants with excessive crying without ear infections also had some risk factors like lower socio economic status, low maternal educations and lack of maternal awareness. But they didn't have feeding related factors and URI as risk factors.

As pneumococcal vaccine is not in national schedule no infants were immunised with this vaccine and household smoke exposures in form of passive smoking or indoor Chula was found in 62% of infants which was also major contributing factor for URI and ear infections.

Discussion

Excessively crying infant though a simple behaviour ,needs to determine possible etiolyg for sme.(2)

Symptoms related to acute ear infections are often very non specific however in this study,we observed different symptoms like irritability,poor feeding and parents perception of ear pain with presence of symptoms of URI helps to identify ear infections. (8,11) .We agree that ear touching or pulling, in the absence of other symptoms and risk factors, is not a good predictor of AOM in young children. Our data suggested that, in infants with URI, and observant parents, ear pain and cough, combined with exposure to bacteria and respiratory viruses increased the probability of AOM diagnosis.

Other studies like chandima et al and laine et al has been done in older children have observed that children with URI has 50% chance of having ear infections(11,12,13). However david et al has also observed similar finding that URI has strong predictive value for acute otitis media in infants.

It is believed that young infants have less specific symptoms of ear infection however we have observed that presence of different risk factors like faulty feeding practice in infants, bottle feeding, lack of exclusive breast feeding has strong association with occurrence of ear infections Presence of maternal antibodies is a protective formula for decreasing ear infections in infants.(9)with presence of any symptoms of URI as strong association with occurrence of ear infection.(8)

we didn't have any infant with pneumococcal vaccine so couldn't fine association with that. other weakness of the study was that we mostly rely on subjective data of parents for other symptoms and symptoms of URI

Conclusion

Thus our observation is that excessively crying infant without having any specific symptoms but having specific risk factors like faulty feeding practices with indoor smoke exposures with presence of URI has strong predictive value of having ear infections, in clinical practice identification of this infants with early treatment can prevent complications in later life reduce risk of deafness and morbidity in this infants.

Table 1 Other symptoms

Other symptoms	Onfants with ear infections (n163)	Infants without ear infections (n117)	P value
irritability	135 (83%)	89(76%)	Not significant
Poor feeding	116 (71%)	94(81%)	
Restless sleep	124(76%)	96(83%)	
fever	32(20%)	16(14%)	
Ear ache	49(30%)	15(13%)	

Risk factors in infants with ear infections

Risk factors	Infants with ear infections (n163)	Infants without ear infections(n117)	P value
Lower socio economic status	147(90%)	105(91%)	Not significant
Over crowding			Not significant
>4 per house	89 (55%)	44(38%)	
<4 per house	74(45%)	73(62%)	
Mother education			Significant <0.001
<high school	117 (72%)	79(68%)	
>high school	46(28%)	38(32%)	
Birth weight			Not significant
>2500 gms	127 (78%)	105 (91%)	
<2500 gms	36 (22%)	12 (9%)	
Feeding practices			Significant <0.001
Proper position attachment	38 (23%)	70(61%)	
EBF for 6 months	58 (36%)	82 (71%)	
Bottle feeding	109 (67%)	47 (41%)	
URI symptoms			Significant <0.001
Nasal block	148 (91%)	12 (10%)	
cough	20 (12%)	0	
Sore throat	4 (2%)	0	
Watery eyes	117 (72%)	17 (15%)	
Indoor smoke exposures	99(61%)	41 (35%)	Significant<0.001
Pneumovac immunisation	0	0	

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