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Original Research Article

Assessment of Middle Ear Effusion in Children Under 5 Years in Timergara

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Abstract

Otitis media with effusion is a chronic inflammatory disease that usually affects children aged 3 to 7 years. Otitis media with effusion is characterized by fluid deposition in the middle ear behind an intact tympanic membrane without the symptoms or signs acute infection. The aim of this study was to assess Otitis media with effusion in children less than 5 years of age. Cross sectional study was carried out in DHQ Timergara, Lower Dir, KPK Pakistan. This duration of study takes a time period of 4 months after topic approval. This study was done on 130 children less than 5 years of age with otitis media with effusion selected through convenient sampling techniques from DHQ hospital Timergara. Data was collected through self-design questionnaire consists of 31 questions to assess otitis media with effusion under 5 year of age. There were a total of 130 participants that participated in this study and of age 1-3 was 53.08%, and 46.92% from 3-5 years, 54.62% male, 45.38% female 53.08% participants were middle level of education, 40.00%, participant were level of metric, 6.92% participant were level of FA and F.Sc and this study finds out that the prevalence of otitis media with effusion is 13.63% in under five year of age.

Keywords: Otitis media, Chronic inflammatory disease

INTRODUCTION

Otitis media is a category of common inflammatory and infectious disorders with various subtypes, symptoms and treatment of the middle ear. Otitis media is a major cause of visits to health care worldwide, and its complications are important causes of preventable hearing loss, especially in developing countries. The Otitis media consists of three types. Acute otitis media, chronic suppurative otitis media and otitis media with effusion (Kumari et al., 2016).

Otitis Media with Effusion also known as "Glue Ear" or "Secretory Otitis Media" is an acute or chronic middle ear cleft inflammatory condition with an intact tympanic membrane comprising a collection of non-purulent fluid behind intact tympanic membranes. The effusion of otitis media is believed to be null at birth. It is the most frequent cause of loss of hearing in children, and the most important explanation for surgery. Otitis Media with Effusion is considered chronic if the fluid continues for more than three months or if the episodes recur six or more times in twelve months it is a very common childhood condition, the most common cause of childhood hearing loss and often involves surgery (Qureishi et al., 2018). Effusion otitis media is a chronic inflammatory condition that usually affects children between 3 and 7 years of age. The effusive otitis media is characterized by fluid deposition in the middle ear without the symptoms or signs of acute infection behind an intact tympanic membrane (Hurst, 2015).

Age, season, family size, siblings, otitis media with effusion history, regular swimming, breast feeding period and public day care seem to have a major impact on otitis media with effusion, even after improvement for nasal infection, upper respiratory tract infection, and Eustachian tube dysfunction. Sex, age, birth weight, and passive the incidence of otitis media with effusion was not associated with smoking Except for age and season, the relative

risks of otitis media with effusion from environmental factors are often small (Iino, 2018). Children who were a) primarily fed with bottles (i.e. not yet exposed to formulae or other foods other than breast milk), b) fed with bottles but not predominantly (i.e. still consuming breast milk but also exposed to formulae and/or other foods) and c) were no longer breastfed at the age of 3 months when they were first screened for respiratory and gastrointestinal infections between 3 and 6 months of age. A wald test assessed the overall importance of interaction to each infection. First, breastfeeding after 6 months, consisting primarily of non-exclusively breastfed babies, was investigated in relation to infection odds at intervals of 3 months up to 18 months when 93% of babies avoided breastfeeding (Short et al., 2016).

Finally, the association between the overall length of special breastfeeding and the incidence of contagions later age 12 months was investigated, attuned for the baby's age and non-exclusive breastfeeding period. In general, breastfeeding interactions with respiratory and gastrointestinal infectious episodes were of special concern, as were Specific subgroups of respiratory and gastrointestinal infections, including: cough, common cold, laryngitis and tracheitis, pneumonia, enterovirus, middle ear tonsillitis or streptococcal infections, bronchitis and lower respiratory infections, conjunctivitis, diarrhea, infections of the urinary tract, gastroenteritis and gastrointestinal symptoms; Effusion-bearing otitis media is a common pediatric disorder. The disease is mostly asymptomatic, making it possible to neglect. However, otitis media with effusion can lead to hearing loss which impairs the language and behavioral development of the infant. While any child can develop otitis media with effusion, the following are some of the factors which may increase the risk of developing otitis media with effusion. Being bottlefed while lying on the back, being around someone who smokes, lack of breastfeeding, ear infection background, craniofacial abnormalities (e.g., palate cleft).

Otitis media with effusion is typically a result of the Eustachian duct's poor work, the duct that links the middle ear to the area around the mouth. The Eustachian tube helps control the pressure between the air and the inner ear around you. If this tube is not functioning properly, it prevents natural fluid drainage from the middle ear, allowing the fluid to collect behind the eardrum. Many of the reasons for the failure of the Eustachian tube include: an unfinished tube common for youngsters in Eustach. An inflammation of the adenoids, a cold or an infection that can cause swelling and irritation of the nose, throat and lining of the Eustachian tube (this swelling prevents normal air and fluid flow). Most cases of the effusionary otitis media are diagnosed clinically after an otoscopic examination. Using a pneumatic otoscope lets the doctor assess middle ear effusion and calculate the position of the tympanic membrane. Use of binocular or telescopic video-otoscopy may improve otoscopy, especially in children. You can see a liquid film, bubbles, darkness, an ocre or bluish coloration and the tympanic membrane central retraction. An effusive otitis media diagnosis is confirmed if the same symptoms occur three months later. The tympanogram contains a test of tympanic conformity. The effusive otitis media is a Tympanogram of type B. To confirm the presence or absence of adenoid hypertrophy, the application of nasal endoscopy should be limited to cases of nasal obstruction or very extreme effusive otitis media. Nasal endoscopy also allows a rhinopharyngeal tumor to be treated differently (McCormick, 2015). Screening for an underlying palatal condition is important, Since this can complicate the treatment of otitis media with effusion. Similarly, craniofacial dysmorphism and polymalformational syndrome are risk factors for otitis media growth, frequency and recurrence in effusion. Not only do our ears help us listen, they also play an important role in keeping the balance (Chole and Nason, 2019).

In developing countries including Pakistan, statistical data on acute otitis media with effusion an infectious disease that often affects children are small. This work aimed to evaluate otitis media with effusion in children under the age of 5 in Timergara, Pakistan.

Rationale

It is the definition of a current problem which needs to be addressed. This provides the backdrop for the analysis and creates the questions that the research aims to address. The rationale is the focal point of any research.

A research carried out in Pakistan hospitals by Tariq et al. To evaluate the increased incidence of Otitis media in children below 2 years of age 1724. This research result indicates that otitis media incidence in Pakistan is 4.4 per cent (75/1724). This rate is even less similar to the research performed in other developed worlds through looking for past studies. A research carried out by Auinger et al. reveals that the rate of otitis media in infants under six years of age between 1988-1994 is 68.2 per cent (Lin et al., 2018).

Humaid, Abou-halawa, Masood, Nuha, and Al Duways Ali Saleh, 2014 Conducted a study to assess the prevalence of effusion otitis media (EMO) among 1488 school kids and associated risk factors in the affected children. They used otoscopy and tympanometry to identify and clarify OME study reported a severity of OME in the sample population of 7.5% (112/1488) and related risk factors in affected infants with Age below 8 years, family size above 4, mother education below secondary school, chronic acute otitis media (CAOM).

A research funded by Magd, Yousef, El-Asheerr, and Sobhy, (2015) to assess the risk factor linked In children aged 6 months to 2 years with an effusion of otitis media. Findings from this analysis show that there was no

clinically significant interaction between OME and class, age and mother employment. There is a statistically important association between OME and bottle feeding that use soother, mother schooling, child's siblings and tobacco smoke exposure (Sadé and Ar, 2016).

Corbeel, (2007) published a study detecting different causes of Otitis media. Findings show that bacteria causes around 70 percent of all AOM events, Streptococcus pneumonia, Haemophilus influenza and Moraxella catarrhalla are three major bacterial pathogens (Brown, 2015).

Study Lau, Murray, El-, Saxena, (2015) shows that the prevalence of OM within infants under 10 years of age was lowered by 22 percent following the launch of the A 7-valent pneumococcal conjugate vaccine (PCV-7) and a further 19 per cent decrease were found prior to the launch of PCV-13 in the UK. In Pakistan, however, no study used National Health Coverage service to define the economic burden of the OM15.

Ali et al. (2016) The Pakistani study indicates that Pakistan became the first nation in the South Asian zone to incorporate PCV-10 into the routine immunization system. This report states that the Pakistani government, with help from Gavi, the Vaccine Initiative, and other partners, launchedPCV-10 in a quick manner, beginning in October 2012. There are presently several studies under way to determine the effect of the implementation of PCV in Pakistan's EPI16.

A cross-sectional research published by Keshangari et al. (2017) based on the assessment of healthcare Effectiveness of effusion handling otitis media A total of 62 participants are included in this study and routine medical treatment of otitis media patients. 42 (67.7%) improved from the disease while 20 patients (32.25%) did not change.

A research performed prospectively across 335 successive acute otitis media incidents with effect on the occurrence and associations of earache. The results of this study suggest that in 141 (41 percent) episodes, in 134 (40 percent) and in 57 (17 percent) episodes, ear disease was severe, mild / moderate. The rate of seemingly pain free, acute otitis media with effuion between babies shorter than 2 years of age was greater than between older kids (25 percent v 7 percent). Redness of strongly bulging tympanic membrane has been associated with an increased risk of ear disease. Nor the gender nor the degree of intervention (one v of both ears) were separately related to earache. Pain in ear, particularly between infants and children, is not an inescapable element of AOME. Identification in small children of all AOME cases Includes a high suspicion index, also in obvious lack of earache.

Another research was carried out on 171 infants with acute otalgia to check out if otalgia or some other signs were so closely related to acute otitis media that otoscopic review was inappropriate. Acute otitis media was reported in 46%, 15% simplex otitis, 17% serous otitis media, and 22% healthy eardrums. Children with acute otitis media reported fever and sudden eardrum perforation in 78 percent and 30% of events, overall. Of the kids who did not have acute otitis media (54 percent), this study reveals that in certain cases, otalgia may be categorized as referred pain attributable, for example, to swallowing distress, nasal obstruction or throat pain.

A research published by (Ilechukwu, 2014) on the clinical function of acute otitis media shows that acute otitis media poses earache (otalgia), fever, hearing loss and a pus discharge via tympanic membrane perforation. This research also indicates that children were more vulnerable to otitis media, signs are un-specific which can include irritability, restlessness, bouts of crying, anorexia, diarrhea, fever, and sometimes, seizures and excessive pulling and rubbing of the ears May be indirect evidence of acute otitis. Acute otitis media with effusion typically shows asymptomatic middle ear effusion which can be combined with a "plugged ear" sensation. A mild to moderate conductive hearing loss is associated with an effusion.

A research conducted in Finland found that infants with cough, rhinitis, and earache were at higher risk of developing acute otitis media. Using these signs, the severity was 63%, while its reliability was 67%[16]. A beneficial predictive value for patients lower than 2 years of age was lower (55 per cent) and stronger for elderly patients (78 per cent). In Nigeria, [9] found that otorrhoea and otalgia occurred in only 20% and 13% of kids with acute otitis respectively, while fever and cough were common symptoms.

Global Ambulatory Medical Care Study, and Ambulatory Medical Care Study of the Global Hospital, 2005–2010. They found that age is an e Similar epidemiological studies Which aid in the effusion of evidence for the allergy-to-otitis media relationships. Roditi used data from 1,481,044,264 pediatric visits from the allergy-to-otitis media flaw predictor with effusion, finding that a major relationship was identified in infants 6 years of age and older, whereas no relevant interactions were found in smaller children.

In the Avon Longitudinal Child and Pregnancy Study, the British preschool children registered OME frequency among visitors. Midgley et al. recorded a lowering in otitis media incidence with effusion with increasing age, and a pronounced seasonal impact on otitis media incidence with effusion. It just seems clear there is a connection between allergy and otitis media with effusion, but the impact on age has not yet been explained. Gideon wanted to prove the otitis media's pathophysiological mechanisms with effusion as the inflammation in atopic individuals ' middle ear effusion, however he refused to suggest that OME was triggered by allergic inflammation.

A study conducted by (Walker, 2017) Focus on risk factors in pre-school infants for Persistent otitis media with effusion. Children with persistent otitis media with effusion frequently endured nasal obstruction (OR: 3.47

(94% CI: 3.46–7.37), sometimes snored (OR: 4.53 (94% CI: 2.41–8.14) or sometimes snored (OR: 4.53) (OR: 1.58 (93% CI: 2.15–4.87), spent more hours a week in day care (OR: 1.04 (94% CI: 1.00–1.06), had chronic colds (OR: 3.66 (97% CI: 1.49–4.52), had siblings subjected to tympanostomy tube placement (OR: 2.68 (96% CI: 1.21–5.03), had long-term jobs (OR: 1.21–5.03). (OR: 2,59 (95 per cent CI: 1,03–6,89) and added early cow milk. (OR: 1.66 (CI: 1.05–2.87, 65 per cent). Asian ethnicity (OR: 0.20 (95 % CI: 0.06–0.53) and older siblings (OR: 0.54 (95 % CI: 0.31–0.92) were inversely related to the effusive chronic otitis media.

A research conceived by (Elahi, Fatima, Ayesha, and Sophia Baig, 2015) to produce communities population-based data on the existence and reasons of hearing problems in rural Pakistani children using group screening to recognize and assess hearing impaired children. A total of 607 children enroll in the sample population, with a prevalence of 7.9 per cent overall hearing loss. A research conducted by (Manche, Jangala, Koralla, and Akka, 2016) to assess the occurrence of otitis media variants and their relation with hearing problems in South Indian infants, in which 896 otitis media patients Seen from 2010 – 2014 at EBB ENT Hospital, Hyderabad Telagan State. This study found that 15.5 percent of 896 patients with otitis media Acute suppurative otitis media (ASOM), chronic suppurative otitis media (BDOM) 65.3 percent, and ebullient otitis media (OME) 19.2 percent, with large quantities of 1.8:1 male. Studies carried out by a joint panel of practice areas study showing 16-39 percentage point prevalence of middle ear fluid by Screening of healthy children from infancy till age 5. In addition, 50-60% of child care workers and 26% of school-age children were found to have middle ear fluid episodes at some point during the test period, with a peak frequency during the winter months (Roush & Corbin, 2016), among children tested for 2 year at regular intervals.

Between 84 and 93 per cent of all babies experience a fluid episode with a maximum of 1 middle ear. Furthermore, approximately 80 per cent of children had an effusive otitis media (OME) when they were less than 10 years of age (Roush & Corbin, 2016) Fluid in the middle ear is not similar to an ear infection. An ear infection arises when fluid in the middle ear contaminated with viruses, bacteria or both, sometimes cold. Kids with middle-ear fluid have no signs of infection or complaints. Most kids don't have fever or extreme pain, but can experience sharp pain or hearing problems. Around 90 percent of kids at a certain stage since age 5 get middle ear fluid (Siddiq and Grainger, 2015).

A research conducted by (Sabar et al., 2018) reveals that at present, nearly 335 million people across the globe have been affected by allergies of any sort and 100 million more are predicted by 2025. .Annual average asthma death rate globally is estimated to be 180,000 (Braman, 2006). In advanced nations the prevalence of allergies is greater than in developing economies.

In Pakistan, the research performed by (Waqar et al.,2009) indicates considerable variability in recording allergy incidence in various areas ranging from 4.3 percent to 31.58 percent. The disease kills about 20 percent of Pakistan's total childhood community. Lifestyle changes and growing urban growth have dramatically increased the incidence of asthma in Pakistan over the past decades and it is projected that the The number of asthmatics is expected to increase over the next decade (Braman, 2006).

In the year 2007, a local study was performed at Allergy Center NIH, Islamabad, on retrospective examination of already diagnosed allergic patients. The research was planned to examine the most prevalent allergic condition in patients visiting The National Health Institute (NIH) Allergy Centre, Islamabad. According to this report, the overall prevalence in Pakistan is 24.6 percent for allergic rhinitis,24.04 percent for urticarial, 19.4 percent for bronchial asthma and 8.4 percent for eczema in the 12-55 year age group. Majority of this population's asthma was confirmed to have been caused by environmental allergies (Ahmad et al., 2011).

A study conducted by wollar, show adults get 2 to 8 colds a year while children get 4 to 6 colds a year. Colds occur throughout the year, the overall burden of disease that they cause is greater than the burden of seasonal influenza. A dual-center study on the Multi-center research (11 hospital departments of otolaryngology) conducted prevalence of vestibular and balance disorders in children and adolescents by age group (Lee et al., 2017). This study finds that benign infant paroxysmal vertigo was most frequent in the preschool age group followed by the migraine vestibular. In the school-age population benign infant- and vestibular migraine paroxysmal vertigo was the most severe, followed by psychogenic vertigo and benign positional vertigo (BPPV). VM was the most common among adolescents although some adolescents also saw Meniere's disease, a cardiogenic vertigo, although mostly seen in adults.

The (Kuehni et al., 2008) determined incidence, frequency, and risk factors for snoring in a population survey of 6,811 children aged 1–4 years (from Leicestershire, UK), in particular habitual snoring.. Parents confirmed snoring in 59.7 percent of children during the preceding 12 months, including 7.9 percent with normal snoring and 0.9 percent with frequent snoring and sleep disturbance. The incidence of daily snoring rose from 6.6 per cent in 1-yr-olds to 13.0 per cent in 4-yr-olds with age.

A case-control study (Ilicali, Keleş, Değer & Savaş, 1999) was conducted to establish the impact of second-hand smoke on effusive otitis media (OME) and recurrent otitis media (ROM); this research found that smoking cigarettes was a significant risk factor for OME and ROM.

Infants with COME sometimes had nasal congestion

(OR: 4.38 (95 percent C: 2.36–7.19), often snored (OR: 3.64 [95 percent CI: 1.61–9.14) or often snored (OR: 2.45 (95 percent CI: 1.04–5.96), spent more hours a week in daycare (OR: 1.03 (95 percent CI: 1.00–1.05)), had daily colds (OR: 1.03). OR: 2.67 (95 percent CI 95 percent CI: 1.68 (95 percent CI: 1.42–5.03), had long-term labor OR: 2.58 (93 percent CI 1.04–6.49), and had early cow's milk (OR: 1.76 (96 percent CI: 1.04–3.86). Asian race (OR: 0.20 (95 % CI: 0.07–0.53) and older brothers and sisters (OR: 0.55 (95 per cent CI 0.21–0.82) is equivalent to COME. This study suggests that COME was related to pathogenic exposure, respiratory infection and nasal obstruction in pre-school studies.

Walker, R. E., Bartley, J., Flint, D., Tompson, J. M., & Mitchell, E. A. (2017). (2015). Chronic otitis media determinants with effusion in preschoolers: a case–control report. BMC pediatrics, paragraphs 17(1), 4.

A research carried out in Otorhinolaryngology's, School of Medicine, indicates that the hearing loss found in otitis media can result from middle ear structural disorders. Ultra systemic defects and cochlea biochemical abnormalities, or core auditory pathway disorders. For example, a mild fluctuating hearing loss follows around 50 per cent of cases of secretory otitis media as per the literature, as the first three years of life are critical for language growth, children affected by otitis media are at risk of current language learning disturbances, behavior and future academic success. This research reported that the key impacts of otitis media and hearing loss on language development are phonetic and voice articulation issues, as well as reading understanding disability.

Impact of the otitis media on child's language development. J Pediatr (Rio J), 391-396, 79(5)

The research published at Rochester University that does not show any important results in association analyses for OME analyzes throughout early childhood and receptive or expressive language within pre-school years. Likewise, since the preschool years, there were no important results for OME versus vocabulary, syntax or voice. In comparison, in the team surveys there is a clear negative correlation among OME and the receptive and verbal language of pre-schoolers (lower expression, 0.24 and 0.25 classic gap, respectively). This report found that the findings suggest no to very limited harmful OME relations and related hearing loss to the late development of speech and language in infants. Such results that overvalue the influence of OME on outputs, like most studies have not accounted for known relevant factors (such as socioeconomic status) and missed information that is not appropriate for statistical pooling, particularly from methodologically sound research. Even if some variations in the OME language were observable via meta-analysis due to improved statistical capacity, the clinical significance for otherwise healthy kids is unknown.

Rosenfeld, R. M., Roberts, J. E., & Zeisel, S. A. (2015). Otitis media and language and speech: A meta-analysis of prospective research. Childcare, 113(3), e238-e248.

The study is focused on 153 charts (55.6 per cent males, 59.4 ± 16.4 months mean age). 75.8 per cent of the children had a simple RAOM and the OME RAOM was 23.3 per cent. 47.7 and 41.3% of children suffered from atopy or allergy, respectively. In children with OME RAOM the prevalence of atopy or allergy was significantly higher (63.0 vs. 49.3percent; $p < 0.01$; allergy 70.2 vs. 46.4 percent; $p = 0.059$), who also displayed adenoidal hypertrophy ($p = 0.17$), chronic adenoiditis ($p = 0.06$), conductive hearing loss ($p = 0.05$), and reduced tympanometry ($p < 0.03$) more frequently. The above study found that growing babies with an OME RAOM are clinically distinct from children with simple RAOM because they have a more complicated clinical appearance that often includes adenoidal disease and audiological impairment but also an underlying allergy or atopy. In ad hoc epidemiological study , it is important to investigate further the possibility that the above-mentioned factors may be involved separately in the heterogeneous clinical manifestations that occur in children vulnerable to otitis.

Torretta, S., Carioli, D., Pignataro, L., Ibba, T., Folino, F., Rosazza, C.,... & Marchisio, P. (2018). Phenotype Profiling and Allergy in Children with Otitis-Prone. Pediatric frontiers, n. 6, 383.

A further report was carried which prospectively examined the incidence of AR, serum eosinophil count and overall serum IgE concentrations in 123 infants with OME and 141 controls. In infants with OME even without AR, IgE concentration in middle ear effusion was matched, and eustachian tube functioning was compared after a nasal provocation check among clinicians with AR and controls. The incidence of AR in children with OME (28.4 per cent) and safe controls (24.1 per cent) was not substantially different. These 2 groups have recorded no differences in the concentration of IgE in the total number of eosinophiles and the serum and middle ear effusion. Anomalies in the Eustachian tube function were the same in AR and Control Clinicians. The above study found that allergic rhinitis could not be attributed to childhood OME growth.

Yeo, S. G., Eun, Y. G., Park, D. C., & Cha, C. I. (2015). (2007). the role of allergic rhinitis with effusion in the development of otitis media: impact on the role of tubes within the Eustachian zone. American otolaryn-gological journal 28(3), 148-

In recent years the role of allergic disease in OME pathogenesis has been intensively examined. An allergic cascade triggered by reaction is predicted to cause blockage of the Eustachian tube that could further advance into an OME (2–7). In a retrospective analysis,

OME was associated with concomitant allergic rhinitis (OR= 1.38, CI=1.09–4.20, P=0.001) and not with non-allergic rhinitis, asymptomatic sensitization, asthma or eczema. And this relationship tends to be stronger in teenagers 6 years of age and up; while small children have no meaningful link. In EOM cases, 63% of participants (63%) versus 10% of command clinicians (10%) have antigen-specific IgE in middle ear effusion while there is no gap in overall IgE serum levels. This study concluded there is a high prevalence of OME in girls. Loss of hearing associated with OME is a main health concern. The upper airway's natural defensive mechanisms via the epithelial barrier to defense, and innate immunity defend against foreign microbe attacks. Deficiency of these allergy-related defences may result in increased exposure to infectious organisms of the respiratory tract and middle ear mucosa.

Zernotti, M. E., Pawankar, R., Ansotegui, I., H. Badellino, Croce, J. S., Hossny, E.,... & And Zhang, (2017). Effusion and atopy Otitis media: Is there a causal connection?. Journal of the World Federation for Allergies, 10(1), 37.

In the reinforced community, ear symptoms rating, diagnostic signs rate, Peripheral blood eosinophilic counts, CT concentrations and hearing levels for air conduction improved after the inhalation therapy was improved but not in the control group. The lung function tests (forced vital ability [predicted percentage], forced expiratory volume within 1 second (FEV1) (L) and FEV1 (percentage) significantly improved in the reinforced post-therapy population but not in the study community. In such an experiment we found that effective inhalation therapy with EOM and asthma was applied in clinicians, EOM increased along with improved pulmonary function. It can be effective to prescribe the optimisation of asthma therapy for concomitant EOMs.

Seo, Y., Nonaka, M., Yamamura, Y., R., & Tagaya, E. (2018). Optimum regulation of asthma has enhanced otitis media in eosinophilic form. An Allergy to Asia Pacific, 8(1).

Of the 519 participants throughout this survey, eighty-three had a confirmed asthma diagnosis made by the referring physi-cyan priorto surgery. Nine of the 519 cases would have a background of recurrent wheezing-related bronchitis which their childhood ians identified as possibly asthmaAccordingly, 16 per cent of the 519 cases reported had asthma. When "likely" cases were considered, 18 per cent of patients suffered from asthma. Such figures were associated with records of asthma and asthma-like symptoms for infants in the general public (ages 0-14), and a statistically significant gap was observed (p= 0.0000). A research by Dodge et al. recorded the incidence of asthma or asthma-like situations in child's general public as being: 1.7 % (0-4 years), 7.3 % (5-9 years), and 8.9 % (10-14 years) for an total of 6f5.9 % of kids (0-14 years). The research suggests that a asthmatic infant does have a higher propensity to acquire otitis media. With most situations, a baby with asthma may take more time to outgrow the propensity to grow otitis media, as indicated in this category by a higher percentage of several tubes.

Bizal, J. A., Gamble, J. E., & Daetwyler, E. P. (2015). The asthmatic pediatric client has otitis media and recurrent middle ear effusion. Journal of Head, Nose & Neck, 71(9), 397-399.

The severe incidence of atopy linked to effusion-related otitis media (OME) has suggested an allergic role in OME pathogenesis. Previous research concerned allergy to otitis media pathogenesis. Otitis media is a severe disease particularly in children. Some episodes of OM have been correlated with an upper respiratory viral infection, and are short-lived and self-limiting with and without medical care. Chronic OM with effusion (OME) has subsequently a major sequelae, most medical therapies are refractory and also require surgical intervention. A ssbroad variety of scientific and epidemiological evidence endorses allergic [AR] rhinitis as a threat to OM. To establish the link between allergic rhinitis and otitis media, 110 children between the ages of 4 and 15 were examined with effusion, 60 infants had otitis media and 40 were healthy. Both of these children were clinically tested, and a series of laboratory tests were conducted to determine the severity of allergic rhinitis in babies for all ages. Of the 60 children with otitis media 15 had allergic rhinitis and 2 of 51 stable children had allergic rhinitis. Work in Chi-square was performed, and it was also found that the value of 'P.005' was 0.102(uncorrected) and highly significant. Such results suggest that in persons with OME the incidence of allergic rhinitis is higher than in healthy people.

Yeo, S. G., Eun, Y. G., Park, D. C., & Cha, C. I. (2008). (2017). The allergic rhinitis work in the development of otitis media with effusion: effect on the working of the Eustachian tube in the area. American Journal of Otolaryngology 28(3), 148-152

Highly related to extended families, insufficient parental education, 3rd year Otitis media education $p < 0.005$) children are also more likely to experience otitis media when faced with asthma, cough, laryngo-pharyngeal reflux, snoring and apnea $p < 0.005$). Allergy plus urban climate increased the risk of otitis media in children exposed to smoke by 167 percent and 278 percent respectively $p < 0.005$); the combined impact of asthma and the involvement of animals in allergic populations increased the risk of recurrence by 12%, while allergy, cough and runny nose combined increased the risk by 75%. Both evidence suggests that upper respiratory tract and otitis media infections are common infant diseases closely linked to low parental education (p= 0.002), smoke exposure (p= 0.002), indoor mold exposure (p= 0.0001), and laryngopharyngeal reflux disease (p= 0.003). And absence of chest feeding (p= 0.0014); increased risk of otitis media recurrence in the mere existence of allergy, recurrent cough and runny

nose (p= 0.002) has been observed; it should be suggested that the established risk factors for otitis media be changed to conduct a proper primary health care intervention Cigarettes (P<.05) per day; Maternal smoking alone was a major factor (P<.02); no matrimonial smoking connection was found.

OBJECTIVE

To assess middle ear effusion in children of Timergara city KPK Pakistan.

HYPOTHESIS

Alternative hypothesis

There is an association between age and otitis media with effusion

Null hypothesis

There is no association between age and otitis media with effusion

Operational Definition

Otitis Media

Inflammation of the middle ear characterized by the accumulation of infected fluid in the middle ear, bulging of the eardrum, pain in the ear.

Otitis media with Effusion

Effusion is an inflammatory condition of the middle ear cleft, acute or chronic, with collection of non-purulent fluid behind an intact tympanic membrane.

MATERIAL AND METHODS

Study Design

This was cross sectional survey study design.

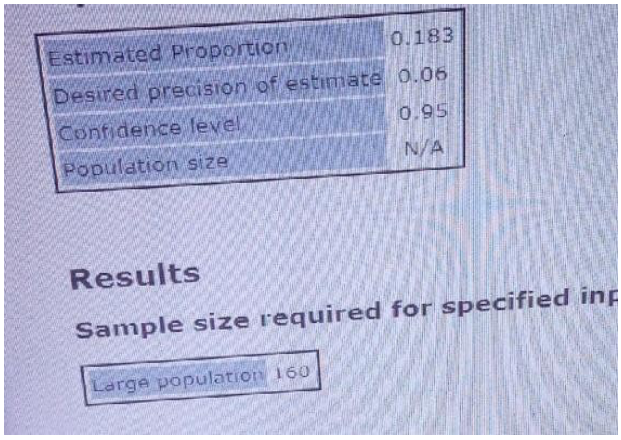
Settings: DHQ timergarah, Dir Lower KPK.

Duration of Study: The duration of this study was 4 month after the approval of synopsis

Sample Size: The simple size of this study was 130.

Sampling Technique: Convenient sampling technique was used in this study.

Sample Selection



Inclusion Criteria

Simple was selected from population of Timergara KPK Pakistan.
Both genders were included.
Children under five years of age.

Exclusion Criteria

Children of Timergara village more than five years are excluded from this study.
Children with ototoxicity were excluded.
Children with Otosclerosis were excluded.
Children with Tympanoseclerosis were excluded.
Children with Noise induced hearing loss were excluded.
Children with Meniere's diseases were excluded.
Children with Congenital hearing loss were excluded.
Children with chronic suppurative otitis media were excluded.

Ethical Considerations

The rules and regulations set by the ethical committee of university of Lahore were followed while conducting the research and the rights of the research participants were respected.
Written informed consent attached was taken from all the participants.
All information and data collection was kept confidential.
Participants were remained anonymous throughout the study.
The subjects were informed that there are no disadvantages or risk on the procedure of the study.

Table 1. Ages

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1–3 years	69	53.1	53.1	53.1
	4–5 years	61	46.9	46.9	100.0
	Total	130	100.0	100.0	

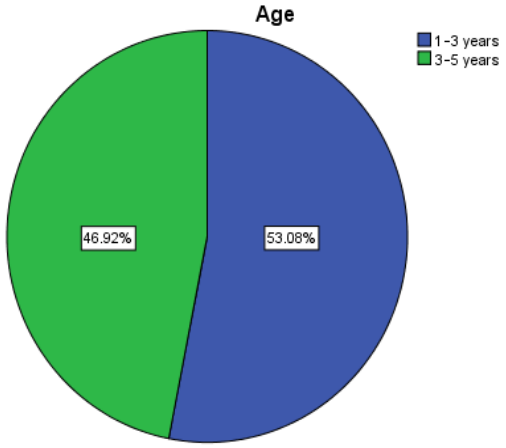
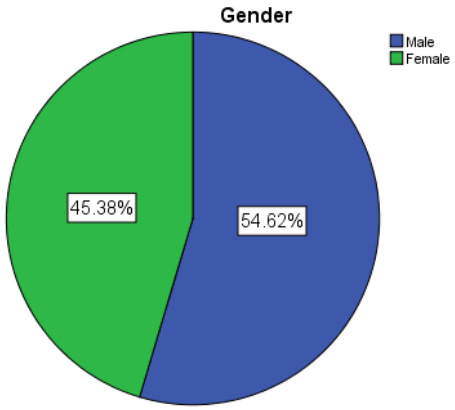


Table 2. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	71	54.6	54.6	54.6
	Female	59	45.4	45.4	100.0
	Total	130	100.0	100.0	



They were also be informed that they will be free to withdraw at any time during the process of the study.

Data Collection Procedure

Data was kept in under key and lock while keeping keys in hand. In laptop it was kept under password. Data was collated from Timergara DHQ. A self-administered questionnaire consist of 31 questions with likert scale options (Yes, No, not known) was used to collect data from the participants. The data was collected from Timergara Dir Lower residence.

Data Analysis Procedure

Data was analyzed using SPSS version 25. Descriptive

Table 3. Mother education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Middle	69	53.1	53.1	53.1
	Metric	52	40.0	40.0	93.1
	FA/FSC	9	6.9	6.9	100.0
	Total	130	100.0	100.0	

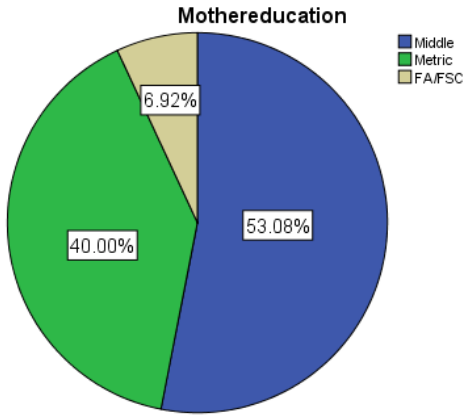


Table 4. Does your child crying that does not stop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	14	10.8	10.8	10.8
	2	116	89.2	89.2	100.0
	Total	130	100.0	100.0	

Table 5. Does your child have runny nose?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	13.1	13.1	13.1
	2	113	86.9	86.9	100.0
	Total	130	100.0	100.0	

statistics were used to analyzed data. The outcome of this study will offer detail result in frequencies, percentage, bar chart and tables.

The results of this study consists of tables, graphs and charts all of them are given below.

Table 1 and Figure 1 show that in this study the age of participant 1-3 was 53.08% , and 46.92% from 3 5 years

Table number 2 and figure number 2 show that in this study there were 54.62% male and 45.38% female.

Table number 3 and figure number 3 show that there were total 130 participant in this study, 53.08% participants were middle level of education, 40.00%, participant were level of metric, 6.92% participant were level of FA and F,sc

Table number 4 shows that there were 130 participant participate in this study 10.77% participant responded to option yes and 89.23% participant were responded to option no.

Table number 5 shows that there were 130 participant participate in this study 13.08% participant responded to option yes and86.92% participant were responded to option no.

Table 6 shows that there were 130 participant participate in this study 10.77% participant responded to option yes and 89.23% participant were responded to option no.

Table 7 shows that there were 130 participant participate in this study 8.46% participant responded to

Table 6. Is your child always congested?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	14	10.8	10.8	10.8
	2	116	89.2	89.2	100.0
	Total	130	100.0	100.0	

Table 7. Is your child having prolonged episodes of fluid in the ear that won't go away?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	8.5	8.5	8.5
	2	119	91.5	91.5	100.0
	Total	130	100.0	100.0	

option yes and 91.54% participant were responded to option no.

DISCUSSION

This was a cross Sectional study which explore the otitis media with effusion in children of Danwah village. Data were collected through questionnaire which consist of different questions. In response to this question does your child have earache? Out of 130 participant 6.154% participant responded to option yes and 93,85% participant were responded to option no. Pain in ear in children are common. They can be caused by liquid behind the eardrum, and disease within the center portion of the ear, or an contamination within the ear canal. Kids beneath 5 a long time ancient are at the next chance for ear diseases, particularly after upper respiratory contaminations like a cold. In reaction to this address. Is your child feel irritability. Out of 130 5.38% member reacted to alternative yes and 94.62% member were reacted to choice no. Peevishness in children: what we know and what we ought to learn. Fractiousness can be characterized as expanded inclination to outrage, relative to peers. Clinically, it shows as formatively unseemly mood upheavals and bleak, grumpy temperament; hence, it incorporates both behavioral and temperament components. Peevishness can be characterized as expanded inclination to outrage, relative to peers. Clinically, it shows as formatively improper mood upheavals and gloomy, grumpy temperament; in this way, it incorporates both behavioral and disposition components. Related builds are disposition dysregulation, which is broader than fractiousness, and animosity, which includes as it were behavioral appearances.

Does your child have fever? 10% member reacted to choice yes and 90% member were reacted to choice no. Fever happens when the body's inside "indoor regulator" raises the body temperature over its ordinary level. This indoor regulator is found in a portion of the brain called the hypothalamus. The hypothalamus knows what temperature your body ought to be (more often than not around 98.6°F/37°C) and will send messages to your body to keep it that way. It's imperative to keep in mind that fever by itself isn't an ailment it's more often than not a sign or side effect of another issue. Fevers can be caused by many things, counting: Contamination: Most fevers are caused by disease or other ailment. A fever makes a difference the body battle contaminations by fortifying normal defense instruments. Overdressing: Newborn children, particularly newborns, may get fevers in case they're over bundled or in a hot environment since they do not control their body temperature as well as more seasoned kids. But since fevers in newborns can demonstrate a genuine contamination, indeed newborn children who are overdressed must be checked by a specialist in the event that they have a fever. Immunizations: Babies and kids some of the time get a low-grade fever after getting immunized.

Does your child have Trouble in sleeping? 44.62% member reacted to choice yes and 80 member were reacted to choice no. Rest issues are classified into two major categories. The primary is dyssomnias. In children, dyssomnias may incorporate Sleep-onset challenges, Limit-setting rest clutter, insufficient rest cleanliness, inadequately rest disorder. Wheezing and obstructive rest apnea. The moment course of rest clutters is parasomnias. Illustrations of common parasomnias incorporates. Sleepwalking, Night dread, Bad dreams, Cadenced development disarranges such as head slamming or shaking.

Does your child crying that does not halt? 10.77% member reacted to alternative yes and 89.23% member were reacted to choice no. Babies cry for numerous reasons, and crying is the most way babies communicate. It's the way they capture your consideration and express their needs. At to begin with, it

may be troublesome to translate your baby's diverse cries, but as you spend more time tuning in, you may ended up superior at recognizing and assembly your child's particular needs. Common reasons babies cry. Languor or weariness, Damp or messy diaper, Starvation, Overstimulation from clamor or movement, Colic, corrosive reflux, or nourishment sensitivities, Torment or sickness, Gas, Stranger uneasiness or fear.

Does your child have runny nose? 13.08% member reacted to alternative yes and86.92% member were reacted to alternative no. In case you're feeling like your kid continuously includes a runny nose, take heart in knowing you're not alone. A runny nose (rhinorrhea) could be a exceptionally common indication of childhood sicknesses, but numerous guardians frequently aren't beyond any doubt of the root cause of the issue. A runny nose might cruel a wide assortment of things, from something as basic as a cold or hypersensitivities to something more genuine like a sinus contamination.

Any problems with speech development? 6.92% member reacted to choice yes and 93.08% member were reacted to choice no. Discourse and dialect is an basic portion of any child's improvement. Dialect advancement impacts your child's social intelligent, behavior and scholastic aptitudes. Early on, babies like to form sounds of their possess. As they get more seasoned, they learn to imitate sounds that they listen. In the event that you're concerned around your child's dialect improvement, you ought to conversation to your pediatrician.

Is your child having repeated ear infections that completely go away between each infection? 10.77% member reacted to choice yes and 89.23% member were reacted to choice no. An ear disease is an irritation of the center ear, as a rule caused by microscopic organisms, that happens when liquid builds up behind the eardrum. Anybody can get an ear disease, but children get them more regularly than grown-ups. Five out of six children will have at slightest one ear contamination by their third birthday. In truth, ear diseases are the foremost common reason guardians bring their child to a specialist. The logical title for an ear contamination is otitis media. Does your child has repetitive URI? 20% member reacted to alternative yes and 80% member were reacted to alternative no. By age 5, approximately 8% of young ladies and 1-2% of boys have had at slightest one urinary tract disease (UTI). Most children who have one UTI will not have another. Anatomic components, toileting propensities, clogging, and other variables may contribute to an raised hazard of reinfection. In the event that your child creates repetitive UTIs two, three or more in.

Is your child always congested? 10.77% member reacted to choice yes and 89.23% member were reacted to choice no. No parent needs to see their child endure. Any child can create sensitivities, but they are more common in children from families with a history of hypersensitivities. Since it's outlandish for guardians to control completely everything that their child is uncovered to or eats, guardians ought to instep center on observing their child for side effects. Early distinguishing proof of childhood sensitivities will progress your child's quality of life, decrease the number of missed school days and assist you maintain a strategic distance from having to utilize wiped out time or excursion days to care for your child. In case your child or girl is battling, take control of the circumstance and counsel an allergist nowadays. Early recognizable proof of childhood sensitivities will move forward your child's quality of life, decrease the number of missed school days and assist you dodge having to utilize debilitated time or get-away days to care for your child.

CONCLUSION

The study findings demonstrated that there were a significant issue of ear disorder especially otitis media in children. This study suggest 13.67% prevalence of otitis media in children of Timergara KP, So this is too much critical value in only 130 simple size if simple size of this study was more than 130 then easily more higher ratio will be expected. Finally this study conclude that community of Timergara had lots of cases of ear disorder especially otitis media in children under five years of age.

LIMITATION

Simple size of this study is less than the demand of community which did not cover whole population.
Language barrier were common among community as they were finding difficulties to understand questionnaire in English or Urdu.

RECOMMENDATION

Most of the residences of Timergara have lack of knowledge about ear disorder, the ENT department of DHQ Timergara need to organize awareness camp about ear disorders.
Community base health education should be perform to aware the people about care of children with otitis media.
Health professional need to organize a health education program about personal hygiene for community of Timergara, to decrease the risk of otitis media in children.
ENT department of DHQ Timergara need to organize free screening camp for ear disorders.

Audiology professionals need to promote the field of audiology because the people of Timergara have no enough knowledge regarding the field of Audiology.

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PROFORMA/QUESTIONNAIRE

S/N	Statement	Yes	No
1	Is your child having repeated ear infections that completely go away between each infection?		
2	Is your child having prolonged episodes of fluid in the in the ear that won't go away?		
3	Has your child had any problems from the antibiotics?		
4	Do you think that recently your child has had fluid in one or both ears for 3 months or more?		
5	Does the ear problem involve both ears?		
6	Does your child snore a lot?		
7	Do you suspect any hearing loss?		
8	Any problems with speech development?		
9	Does your child have any allergies?		
10	Does your child have asthma?		
11	Does your child have frequent colds?		
12	Is your child always congested?		
13	Is your child exposed to cigarette smoke?		
14	Any family history of lots of ear infections?		
15	Any family history of allergies?		
16	Does your child feel feeling of fullness in ears?		
17	Does your child feel dizziness?		
18	Does your child feel ringing in the ears?		
19	Does your child experience feeling of motion in the ears?		
20	Does your child crying that does not stop?		
21	Does your child waking up at night crying?		
22	Does your child have Trouble sleeping?		
23	Does your child have fever?		
24	Vomiting?		
25	Lack of appetite?		
26	Difficulty in eating?		
27	Is your child feel irritability?		
28	Do you feel your child decreased activity?		
29	Does your child have runny nose?		
30	Does your child have earache?		

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