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Pattern and prevalence of common pediatric illnesses presenting in a private hospital in Onitsha, south east Nigeria: A comparative analysis.

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Abstract

Background: Pattern and distribution of common pediatric illnesses are issues often reported in government and teaching hospitals, but very few are reported from private settings.

Objective: To determine the pattern and prevalence of common pediatric diseases presenting at a private pediatric specialist hospital.

Material and methods: This is a hospital based descriptive cross sectional study of children seen in a private hospital from March 2012-March 2014. In all, 2942 patients were studied as seen. Diagnosis of the pediatric illnesses was made based on painstaking history taking, physical examination and thorough investigations including blood film reports, full blood counts, chest X rays, blood cultures, urine microscopy and cultures when necessary and affordable. Patients were managed according to their diagnoses. Data analysis was done using SPSS version 20. Data was summarized using percentages and comparisons subjected to χ^2 analysis with p at <0.05 as significant. These are presented in tables.

Results: There were 1636 (55.6%) male patients and 1306 (44.4%) female patients. Most frequent presenting age group were those aged 0-12 months 1424 (48.4%). Malaria was most frequently found pediatric illness 737 (25%) followed by Reactive airway disease (RAD) 529 (18.0%), diarrhea disease 150 (5.1%), Sepsis 66 (2.2%), UTI 58 (2.0%), Pneumonia 22 (0.8%) and URTI 20 (0.7%), a good number were comorbidities and constituted 864 (29.4%) of the presentations.

Conclusion: Malaria is the most prevalent illness noted in the study however early and accurate diagnosis of reactive airway disease will help to avert numerous complications that may follow its misdiagnosis and administration of wrong treatment.

Keywords: Common paediatric illnesses, Pattern, Prevalence, Disease.

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Introduction

Globally, some milestone has been achieved in reducing mortality in children under 5 years of age [1]. In 2013, there was a good improvement of under 5 mortalities from 12.7 million in 1990 to 6.3 million [1]. It is however painful to know that despite this improvement, the world has failed to achieve the MDG target of a two-thirds reduction in the year 2015 [1]. Studies from most parts of Africa have still shown that infections and other communicable diseases such as malaria, pneumonias, diarrhoeal illnesses are responsible for most hospital admissions [2,3]. On the contrary, non-communicable diseases are more prevalent in developed countries and in adult population [4].

It is pertinent to note that causes of admission vary from one region to another [5]. For instance, while malaria was the commonest cause of admission from a study in a private hospital in Lagos, acute respiratory diseases were commoner in the south-south, though the spectra of constituents of the acute respiratory diseases were not ascertained in the south-south study [5].

In a study of pattern of admissions in hospitals in Hong Kong [7], respiratory disorders constituted 37.5% of all diagnoses, with upper respiratory infections and pneumonia comprising 30.1% and 20.9%, respectively. Furthermore, among all respiratory illnesses, pneumonia, bronchiolitis, rhino sinusitis made up 96.8% of them and these were the findings of other studies [8-11].

This study in a private Pediatric Specialist hospital is

important, as it serves the triple roles of a primary health facility as care givers bring their wards on self-referral as well as the roles of secondary and tertiary health facilities as references from hospitals in the town it is situated and surrounding towns come to it. There is no teaching hospital in the town and the available general hospital is often without the services of a paediatrician on ground. The study is different from others because it tends to not only highlight the pattern of common childhood infections but looks critically at seasonal and where important, monthly variations of these diseases and also tries to isolate all the various types of similar diseases.

The study is therefore aimed at identifying various patterns and possible factor influencing different diseases among children who presented in the hospital over a two-year period.

Methods

The study was carried out in a private Paediatric Specialist Hospital in Mkpor, Onitsha, a commercial nerve centre in Anambra state, south east Nigeria. The hospital is situated in the heart of the city and is about 21 km from the capital, Awka. The hospital serves as the main paediatric referral centre for Onitsha residents as well as other neighbouring towns such as Oba, Nnobi, Agulu, Awka, Nibo, Nise, Ihiala and other surrounding towns.

It has a paediatric ward with 10 beds and a new-born service and full complement of nursing services, resident paediatrician and a consultant paediatrician, lab scientist. Most patients attended to be referrals; self, friends and other hospitals. The study was retrospective where all the case notes of patients admitted into the hospital over a two-year period were used.

Data analysis was done on SPSS version 20. Data was summarized using percentages and comparisons subjected to X2 analysis with p at <0.05 as significant. These are presented in tables.

Patients outside the neonatal age (28 days) with common paediatric illnesses and complete data were included in the analysis. Information extracted from the records included age, gender and month of attendance and final diagnosis.

Definition of Some Terms

Reactive airway disease (RAD) is a term most commonly used to describe a person who is wheezing or having a bronchial spasm, but who has not yet been diagnosed with asthma [12]. Its use is generated by the fact that wheezing is quite common in infants, and only about a third of those infants who wheeze ever develops true asthma [12]. Thus, rather than refer to wheezing infants, who may never really be asthmatics, many physicians have used the term "reactive airways" to refer to this group of children [12].

Pneumonia as an infection of the pulmonary parenchyma caused by various aetiologies [13]. It states that pneumonia is not a single disease but a group of specific infections, each with a different epidemiology, pathogenesis, presentation and clinical course. It is usually proven by Chest X ray and definitively by lung juice culture [13].

Upper respiratory infection: An infection of the upper part of the respiratory system which is above the lungs [14]. An upper respiratory infection can be due to any number of viral or bacterial infections [14]. These infections may affect the throat (pharyngitis), nasopharynx (nasopharyngitis), sinuses (sinusitis), larynx (laryngitis), trachea (tracheitis) or bronchi (bronchitis) [14].

Results

Table 1 shows that majority of patients were aged 0-12 months 1424 (48.4%). Slightly higher proportions were equally male 1637 (55.6%). Similar proportion of the diseases occurred in rainy 1505 (51.2%) and dry 1437 (48.8%) seasons

Table 1. *Socio-demographic characteristics of patients*

Socio-demographic Characteristics	Frequency (n=2942)	Percent
Age categories (months)		
≤ 12	1424	48.4
13-24	648	22.0
25-36	295	10.0
37-48	160	5.5
49-60	110	3.7
>60	305	10.4
Mean(SD)	***14.43(3.55)***	-
Sex		
Male	1637	55.6
Female	1305	44.4
Season		
Rainy	1505	51.2
Dry	1437	48.8
Disease/Diagnosis		
RAD	529	18.0
Malaria	737	25.0
UTI	58	2.0
Pneumonia	22	0.75
URTI	20	0.65
Diarrhoea/Enteritis	150	5.1
Impetigo	18	0.6
Sepsis/viremia	66	2.2
Coinfection/ comorbidity##	864	29.4
Others	341	11.6
Revisit	137	4.7
Coinfection/ comorbidity##	***864***	***29.4***
RAD/Malaria	35	1.2
RAD/others	18	0.6
Malaria/Others	811	27.6

Others: Abscess, sexual abuse, malignancy, foreign body aspiration, virginities, cellulitis, laceration, helminthiasis

Table 2 shows that there were statistically significant associations of gender with Malaria (χ^2=5.314, p=0.021), Co-Infection (χ^2=6.278, p=0.012), but not significant for RAD (χ^2=0.870, p=0.351), UTI (χ^2=1.301, p=0.254), URTI (χ^2=0.260, p=0.610), Pneumonia (χ^2=3.338, p=0.068), Diarrhoea/Enteritis (χ^2=0.067, p=0.795), Impetigo (χ^2=0.219, p=0.639), Sepsis/Viremia (χ^2=0.102, p=0.749), Other diseases (χ^2=0.443, p=0.506 and Well/ Revisit (χ^2=1.033, p=0.310).

Table 3 shows that there were no statistically significant associations of season with RAD (χ^2=0.177, p=0.674), Malaria (χ^2=0.000, p=0.999), UTI (χ^2=0.124, p=0.724), URTI (χ^2=3.607, p=0.058), Pneumonia (χ^2=1.382, p=0.240), diarrheal disease/Enteritis (χ^2=2.144, p=0.143), Impetigo (χ^2=3.217, p=0.073), Sepsis/Viremia (χ^2=0.003, p=0.953), Co-Infection (χ^2=1.111, p=0.292), Other diseases (χ^2=0.079, p=0.779) and Well/Revisit (χ^2=3.115, p=0.078).

Table 4a shows that there were statistically significant associations of age in categories with Malaria (χ^2=32.712, p<0.001) and diarrheal disease/Enteritis (χ^2=31.682, p<0.001 but not significant for RAD (χ^2=4.718, p=0.194), UTI (χ^2=4.862, p=0.182), URTI (χ^2=3.561, p=0.313), Pneumonia (χ^2=6.290, p=0.098) and Impetigo (χ^2=1.579, p=0.6641).

Table 4b shows that there were statistically significant associations of age in categories with Co-Infection (χ^2=23.870, p<0.001) and other diseases (χ^2=24.768, p<0.001) but not significant for Sepsis/Viremia (χ^2=2.386, p=0.496) and Well/Revisit (χ^2=4.147, p=0.246)

Table 5 shows comparisons of diseases with similar presentations and that there was statistically significant difference in the proportion of those that had RAD and URTI (516.42, p<0.001), RAD and Pneumonia (510.67, p<0.001), Malaria, diarrheal disease/Enteritis and Sepsis/ Viremia (943.26, p<0.001).

Though we noted no seasonal variations among the common and serious childhood illnesses, however when

Table 2. *Associations of sex with diseases*

Variable	Disease	No disease	χ^2	p value
HAD				
Male	304 (18.6)	1333 (81.4)	0.870	0.351
Female	225 (17.2)	1080 (82.8)	-	-
Malaria				
Male	437 (26.7)	1200 (73.3)	5.314	0.021
Female	300 (23.0)	1005 (77.0)	-	-
UTI				
Male	28 (1.7)	1609 (98.3)	1.301	0.254
Female	30 (2.3)	1275 (97.7)	-	-
URTI				
Male	10 (0.6)	1627 (99.4)	0.260	0.610
Female	10 (0.8)	1295 (99.2)		
Pneumonia				
Male	8 (0.5)	1629 (99.5)	3.338	0.068
Female	14 (1.1)	1291 (98.9)	-	-
Diarrhoea/Enteritis				
Male	85 (5.2)	1552 (94.8)	0.067	0.795
Female	65 (5.0)	1240 (95.0)	-	-
Impetigo				
Male	11 (0.7)	1626 (99.3)	0.219	0.639
Female	7 (0.5)	1298 (99.5)	-	-
Sepsis/Viremia				
Male	38 (2.3)	1599 (97.7)	0.102	0.749
Female	28 (2.1)	1277 (97.9)	-	-
Co-infection				
Male	450 (27.5)	1187 (72.5)	6.278	0.012
Female	414 (31.7)	891 (68.3)	-	-
Others				
Male	184 (11.2)	1453 (88.8)	0.443	0.506
Female	157 (12.0)	1148 (88.0)	-	-
Well/Revisit				
Male	82 (5.0)	1555 (95.0)	1.033	0.310
Female	55 (4.2)	1250 (95.8)	-	-

Table 3. *Associations of season with diseases*

Variable	Disease	No disease	χ^2	p value
HAD				
Rainy	275 (18.3)	1230 (81.7)	0.177	0.674
Dry	254 (17.7)	1183 (82.3)	-	-
Malaria				
Rainy	377 (25.0)	1128 (75.0)	0.000	0.999
Dry	360 (25.1)	1077 (74.9)	-	-
UTI				
Rainy	31 (2.1)	1474 (97.9)	0.124	0.724
Dry	27 (1.9)	1410 (98.1)	-	-
URTI				
Rainy	6 (0.3)	1499 (99.7)	3.607	0.058
Dry	14 (1.0)	1423 (99.0)	-	-
Pneumonia				
Rainy	14 (0.9)	1491 (99.1)	1.382	0.240
Dry	8 (0.6)	1429 (99.4)	-	-
Diarrhoea/Enteritis				
Rainy	68 (4.5)	1437 (95.5)	2.144	0.143
Dry	82 (5.7)	1355 (94.3)	-	-
Impetigo				
Rainy	13 (0.9)	1492 (99.1)	3.217	0.073
Dry	5 (0.3)	1432 (99.7)		
Sepsis/Viremia				
Rainy	34 (2.3)	1471 (97.7)	0.003	0.953
Dry	32 (2.2)	1405 (97.8)	-	-
Co-infection				
Rainy	455 (30.2)	1050 (69.8)	1.111	0.292
Dry	409 (28.5)	1028 (71.5)	-	-
Others				
Rainy	172 (11.4)	1333 (88.6)	0.079	0.779
Dry	169 (11.8)	1268 (88.2)	-	-
Well/Revisit				
Rainy	60 (4.0)	1445 (96.0)	3.115	0.078
Dry	77 (5.4)	1360 (94.6)	-	-

Table 4a. *Associations of age in categories with diseases*

Variable	Disease	No disease	χ^2	p value
HAD				
0-12	278 (9.5)	1146 (90.5)	-	-
13-36	156 (16.5)	787 (83.5)	4.718	0.194
37-60	47 (17.4)	223 (82.6)	-	-
>60	48 (15.7)	257 (84.3)	-	-
Malaria				
0-12	298 (20.9)	1126 (79.1)	-	-
13-36	250 (26.5)	693 (73.5)	32.712	0.000
37-60	88 (32.6)	182 (67.4)	-	-
>60	101 (33.1)	204 (66.9)	-	-
UTI				
0-12	24 (1.7)	1400 (98.3)	-	-
13-36	18 (1.9)	925 (98.1)	4.862	0.182
37-60	5 (1.9)	265 (98.1)	-	-
>60	11 (3.6)	294 (96.4)	-	-
URTI				
0-12	13 (0.9)	1411 (99.1)	-	-
13-36	5 (0.5)	938 (99.5)	3.561	0.313
37-60	2 (0.7)	268 (99.3)	-	-
>60	0 (0.0)	305 (100.0)	-	-
Pneumonia				
0-12	6 (0.4)	1418 (99.6)	-	-
13-36	12 (1.3)	931 (98.7)	6.290	0.098
37-60	1 (0.4)	269 (99.6)	-	-
>60	3 (1.0)	302 (99.0)	-	-
Diarrhoea/Enteritis				
0-12	104 (7.3)	1320 (92.7)	-	-
13-36	36 (3.8)	907 (96.2)	31.682	0.000
37-60	7 (2.6)	263 (97.4)	-	-
>60	3 (1.0)	302 (99.0)	-	-
Impetigo				
0-12	8 (0.6)	1416 (99.4)	-	-
13-36	6 (0.6)	937 (99.4)	1.579	0.664
37-60	3 (1.1)	267 (98.9)	-	-
>60	1 (0.3)	304 (99.7)	-	-

commonly occurring diseases were separated in months, we noted that patients who had: RAD were mostly seen in September 68 (12.9) and the cases increased in October to 73 (13.8%): Malaria had bimodal peaks - June 91 (12.3) and November 103 (14.0). Pneumonia, July 3 (13.6%), August 5 (22.7%) and September 3 (13.6%), URTI in January 5 (25.0%) and December 4 (20.0%) and Diarrhoea in January 22 (14.7%) to March 17 (11.3%) (Table 6).

Discussion

Malaria infection is the commonest childhood infection that presented in the hospital with prevalence of 25.1 per cent. It has a male preponderance with no seasonal variation. Elechi et al. [15] noted a similar prevalence of 27% with no association with season. The observed difference is higher than the 12% reported in Tanzania study [16] and 16.9% reported by Oladosu et al. [17] in Lagos. Elechi et al. [15] also noted similar rising age-group

Table 4b. *Associations of age in categories with diseases continued*

Variable	Disease	No disease	χ^2	p value
Sepsis/Viremia				
0-12	35 (2.5)	1389 (97.5)	-	-
13-36	23 (2.4)	920 (97.6)	2.386	0.496
37-60	4 (1.5)	266 (98.5)	-	-
>60	4 (1.3)	301 (98.7)	-	-
Co-infection				
0-12	443 (31.1)	981 (68.9)	-	-
13-36	295 (31.3)	648 (68.7)	23.870	0.000
37-60	71 (26.3)	199 (73.7)	-	-
>60	55 (18.0)	250 (82.0)	-	-
Others				
0-12	142 (10.0)	1282 (90.0)	-	-
13-36	108 (11.5)	835 (88.5)	24.768	0.000
37-60	30 (11.1)	240 (88.9)	-	-
>60	61 (20.0)	244 (80.0)	-	-
Well/Revisit				
0-12	73 (5.1)	1351 (94.9)	-	-
13-36	34 (3.6)	909 (96.4)	4.147	0.246
37-60	12 (4.4)	258 (95.6)	-	-
>60	18 (5.9)	287 (94.1)	-	-

Table 5. *Relationship between disease conditions*

Variable	Disease	No disease	χ^2	p value
RAD	529 (18.0)	2433 (82.0)	516.42	0.000
URTI	20 (0.7)	2922 (99.3)	-	-
RAD	529 (18.0)	2433 (82.0)	510.67	0.000
Pneumonia	22 (0.8)	2920 (99.2)	-	-
Malaria	737 (25.1)	2205 (74.9)	-	-
Diarrhoea/ Enteritis	150 (5.1)	2792 (94.9)	943.26	0.000
Sepsis/ Viremia	66 (2.2)	2876 (97.8)	-	-

Table 6. *Distribution of diseases by month*

Month	Diseases		
	HAD (n=529)	Malaria (n=737)	Pneumonia (n=22)
	Freq (%)	Freq (%)	Freq (%)
January	25 (4.7)	64 (8.7)	1 (4.5)
February	34 (6.4)	45 (6.10	2 (9.1)
March	32 (6.0)	31 (4.2)	2 (9.1)
April	40 (7.6)	66 (9.0)	0 (0.0)
May	33 (6.2)	59 (8.0)	2 (9.1)
June	51 (9.6)	91 (12.3)	1 (4.5
July	44 (8.3)	42 (5.7)	3 (13.6)
August	39 (7.4)	49 (6.6)	5 (22.7)
September	68 (12.9)	70 (9.5)	3 (13.6)
October	73 (13.8)	68 (9.2)	1 (4.5)
November	40 (7.6)	103 (14.0)	1 (4.5)
December	50 (0.5)	49 (6.6)	1 (4.5)

specific prevalence as seen in this study. Furthermore, we noted that malaria increases in April and peaks in June and again in September and October and peaks in November.

Several studies have maintained that malaria has a seasonal variation. For instance, Thomson et al. [18] and Ayanlade et al. [19] agree with seasonality of malaria infection. In addition, Molta et al. [20] noted that the relatively dry northern savannah of the country demonstrates strong seasonality in malaria transmission. The results obtained from our study while not showing seasonality however shows monthly clusters that are astride the regular seasons. The reasons for this finding may be environmental and geographical differences and even the attitude and behaviours of the population where these children come from.

Several studies have noted male preponderance in malaria infection which corroborates with our finding [21,22]. This is explained by the fact that during childhood, the extra X-chromosome or absence of Y-chromosome confers inherent survival advantage in females [23]. A second explanation which may be peculiar to the eastern part of Nigeria and some parts of Asia is family male sex preference making it possible for families to seek health care for their male children earlier than for females [23,24]. Similarly, cultural practice of keeping girls indoors to do house chores even at tender ages and allowing the male child unfettered outdoor activity with its attendant exposure to disease may also contribute.

Reactive Airway Disease (RAD) is the next commonest childhood disease that was seen in the study with a prevalence of 18%. Salame et al. [25] noted a whooping prevalence of 99.9%. Though his study was among adult population in a Lebanese community and not a hospital setting. Reactive airway disease is also found to affect less than 15% of children worldwide [26]. There was however low prevalence of RAD (1-3.3%) in the children surveyed in Lucknow, Ludhiana, and Punjab, while in Delhi the prevalence was 11.6% [26]. The reason for this high prevalence could be due to genetic and environmental issues. We however noted no associations with gender but the commonest age of affectation was below 36 months. This is however different from the study of Dileep et al. [26] who noted male preponderance but with a similar age prevalence of 30 months. However, when we looked at the months individually, we noted that RAD had the highest prevalence between September and October though still averagely high in June. Ajay et al. in their study also noted high prevalence of RAD around Monsoon (usually from June to September). Reactive airway disease among children is often a neglected diagnosis among paediatricians and physicians. More often, it is diagnosed as pneumonias and URTIs. When we compared the pattern of RAD with other respiratory diseases, it showed that RAD is the commoner respiratory problem among children in this study and not pneumonias as shown in some other studies [2-4].

Diarrhoeal disease ranks third among common childhood illnesses as seen in this hospital in the years of study with a prevalence of 5.1%. This prevalence is higher among children under 1 year (7.3%) and least among children more than 4 years old (3.6%). Abdur et al. [27] noted a similar overall prevalence of 5.71% among children <5 years old. However, he noted that the highest diarrheal prevalence of 8.62% was found among children aged 12 to 23 months, followed by <1 year old children (6.25%). The lowest prevalence of diarrhoea (3.71%) was found among children aged between 36 and 47 months. Sastrya et al. [28] in Brazil, however, noted a prevalence of 19%. The difference in prevalence rates could be due to methodology issues or could be geographical and cultural. We however noted no seasonal variations in our study.

Diarrhoea prevalence was higher among the males. Some factors found to significantly influence the health care-seeking pattern were age and sex of the children, nutritional score, age and education of mothers, wealth index, and access to electronic media [28,29].

Although rainfall does not appear to have much impact on the relative incidence of diarrhoea, it has been documented that there exists a consistent reduction during July or August and resurgence on January [29]. We noted no seasonal variation in our study. However, when we analysed the monthly pattern of diarrhoea, we noted that diarrhoea occurs mainly between January and March. This agrees with the study of Alexander et al. [30] in Ghana where diarrhoea spans from January to March every year. This finding however negates that of Armah et al. [31] where diarrhoea peaks in two seasons, October to March and July to August. The differences in monthly variation could be due to climatic factors.

Pneumonia and Upper Respiratory Tract Infections (URTI) are the next disease that presented in the hospital at the year of study with frequency of 1.9 and 0.8 per cent. This low prevalence obtained in this study is different from prevalence of 39.1 percent [31] and 33.5 percent [32] obtained from other studies. Lower prevalence of 7% had been obtained in another study [7]. As earlier highlighted, reactive air way disease is often misdiagnosed as URTI or pneumonia thus possibly giving it a spurious prevalence. Correct diagnosis of RAD will indeed give a better picture of prevalence and distribution of Pneumonia. We noted no significant seasonal variations, but when we looked at the months individually, pneumonia usually peaks between July and September though with average prevalence for February, March, May and August. The views of some authors that pneumonia does not occur more in winter or during cold season and opined that most of the specific aetiologies for pneumonia, with the exception of respiratory viruses and Mycoplasma pneumonia, have no seasonal predilection [33] agree with our finding. However, when monthly prevalence is taken into consideration in our study, it would seem that it is in its lowest presentation from October to January. The numbers are however very

few for valid conclusions to be made. It is surprising to note in this study that diarrhoea and URTI was seen mainly in the same monthly distribution of January and March. Weather this is a coincidence or if the same strain of viral aetiology is implicated remains conjectural.

There were no age or gender variations in our study. Teshome et al. [32] however noted a male preponderance and common affectation among the under-fives. Lieberman et al. [33] noted a significant seasonal variation with higher rates for all age groups in the winter and spring. Sepsis and Urinary Tract Infections (UTI) had very few contributions as regards frequency of presentation in this study. Majority of our patients however presented as comorbidities with prevalence of 29.4%. The 2.2% prevalence of sepsis obtained in this study is higher than 0.05% and 0.89% prevalence obtained by Tatsuya and Hartman [34,35]. The reason for the small prevalence rates in our study bothers so much on diagnostic approach used. The use of SIRS with clinical evidence of infection alone to make a diagnosis of sepsis still remains debatable when compared with actual isolation of organism by culture.

The prevalence of 2% obtained in our study on UTI is so small when compared with other studies. For instance, Shaik et al. [36] in his meta-analysis obtained a pooled prevalence of UTI as 7.0%. The pooled prevalence rates of febrile UTIs in females aged 0-3 months, 3-6 months, 6-12 months and >12 months was 7.5%, 5.7%, 8.3% and 2.1%, respectively. We noted no link between UTI and age, gender or seasons.

Our UTI cases were not as a consequence of purposeful study but were from cases where malaria treatment had seemed to have failed or where there are symptoms suggesting UTI. This could also have affected the prevalence. Majority of our patients however presented as comorbidity with prevalence of 29.4%.

Conclusion

Malaria is the most prevalent illness noted in the study however early and accurate diagnosis of reactive airway disease will help to avert numerous complications that may follow its misdiagnosis and administration of wrong treatment.

Limitation of the Study

This study will be better improved if we compare our findings with what is obtainable in a teaching hospital in a stance.

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Ethical Clearance

This was sought from the Ethics Committee of the University of Nigeria Teaching Hospital, Enugu.

Author Contributions

EKO conceived and revised the article, JMC help in the write up of the article. EA analysed the data. All the author read and edited the write up.

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