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A Study of Profile of Children aged 2 months to 5 years admitted with tachypnoea

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Abstract - Tachypnea can be the presentation of multiple different pathologies.A focused history and physical exam,along with an understanding of the pathophysiology of appropriate disease states,can lead to thorough evaluation and management at the bedside. Tachypnea may not be present in respiratory illness only, but also in cardiological causes, underlying neurological disorders, metabolic disorders, sepsis, haematological conditions leading to severe anaemia.

The aim of this study: The aim of this study is to find out the occurrence and clinical profile of tachypnea in hospitalised children from 2 months to 5 years of age.

Study design: The study is designed to be a descriptive observational study conducted over a period of year among children aged 2 months to 5 years admitted at a tertiary care hospital.Out of 846 total admission 145 had tachypnoea. Overall occurrence of tachypnoea was 17.13%

Observation: Occurance of tachypnoea among 2 months to 12 months was 24.53% and 13 months to 60 months was 11.13 %,more number of infants were suffering from tachypnoea owing to the infantile respiratory anatomy they have.More deaths were observed in infantile age group.

Acute respiratory tract infection (N=107)(73.79%)is the most common cause of tachypnea among which, pneumonia was the most common cause of tachypnoea constituting 57 patients (53.27 %) , Severe anaemia with Congestive Cardiac Failure was 2nd most common cause- 8.96% and shock constituted 3rd leading cause of tachypnea with 7.58%, underlying cardiac causes constituted-5. 51 %, underlying neurological causes constituted-4.13%, metabolic causes (DKA) constituted- 1.37%.

Keywords: Tachypnea, children

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INTRODUCTION

Tachypnea can be the presentation of multiple different pathologies.A focused history and physical exam,along with an understanding of the pathophysiology of appropriate disease states,can lead to thorough evaluation and management at the bedside.

Tachypnea may not be present in respiratory illness only, but also in cardiological causes, underlying neurological disorders, metabolic disorders, sepsis, hematological conditions leading to severe anaemia So we undertook the study to find out the underlying causes co morbid condition and outcome of tachypnea in hospitalized children between the age group of 2 months to 60 months in a tertiary care hospital.Clinical profile of patients having tachypnoea in tertiary care hospitals reflects the burden in the community and identifying the risk factors for mortality and morbidity in the children between 2months to 60 months, will help proper

utilisation of available resources and ensure adequate management of these children. Aim of this study was to identify the various causes of tachypnoea among 2months to 60 months old and to analyse various factors influencing morbidity and mortality patterns among them.

CRITERIA FOR TACHYPNOEA

Age	Approximate normal respiratory rates (breaths/min)	Tachypnea threshold (breaths/min)
<2 months	34–50	60
2–12 months	25–40	50
1–5 years	20–30	40
>5 years	15–25	20

Data from references 36 and 37

AIMS AND OBJECTIVES

- To find out the occurrence of tachypnea in hospitalised children from 2 months to 5 years of age
- To study the clinical profile of children from 2 months to 5 years of age having tachypnea
- To observe the morbidity and mortality patterns among the children admitted with tachypnea

MATERIALS AND METHODOLOGY

Study Area : Paediatric ward of tertiary care hospital

Population : All indoor patients between 2months to 5years

Period : OCTOBER 2020 to MARCH 2021

Study Duration : 6 Months

Study Design : It is a Descriptive observational study

Inclusion Criteria : All hospitalized children 2 months to 5 years presented with Tachypnoea according to IMNCI definition.

Exclusion Criteria : Those having physiological causes of tachypnea like fever induced, anxiety provoked, hysteria etc were excluded.

Its fulfilling the inclusion criteria were admitted in the paediatric ward with tachypnoea were included in the study after taking consent from relatives.

Data were analysed as per standard statistical analytical method.

Table 1: Age Distribution in Patients with Tachypnoea

AGE	TOTAL NUMBER (N=145)	%	% SABINETAL
2 MONTHS TO 12 MONTHS	93	64.14%	56.5%
13 MONTHS TO 60 MONTHS	52	35.86%	43.5%
P VALUE	SIGNIFICANT		

The p value is <0.0001 .The result is significant at p<.05

Table 2: Outcome Vs Age

OUTCOMES (N=)	DEATH	PERCENTAGE
2 MONTHS TO 12 MONTHS	3	3.22%
13 MONTHS TO 60 MONTHS	1	1.92%
P VALUE	SIGNIFICANT	

The value of p is <0.0001. The result is significant at p<0.05

Table 3: Gender Distribution in Patients with Tachypnoea

GENDER	NO. OF PATIENTS (N=)	%	% IN SABIN ET ALL
MALE	90	62.06%	61%
FENALE	55	37.93%	39%
P VALUE	SIGNIFICANT		

The value of p is <0.0001.The result is significant at p<0.05

Table 4: Etiological Causes of Tachypnoea

	ETIOLOGICAL CAUSES	NUMBER OF PATIENTS	%(N=NO. OF CAESES IN SYSTEAM INVOLVED)
RESPIRATORY CAUSES	BRONCHIOLITIS	30	28.03%
	WALRI	10	9.34%
	CROUP	4	3.73%
	PNEUMONIA	57	53.27%
	PLEURAL EFFUSION	1	0.93%
	ASTHAMA/HRAD	5	4.67%
SEVERE ANEMIA (N= OUT OF) (8.96 %)	SEVERE ANEMIA WITH CCF	13	-
CARDIOLOGICAL CAUSE	ASD	1	12.5%
	VSD	2	25%
(N= out of) (%)	PDA AND PFO	2	25%
	TOF AND POF	2	25%
	OTHERS (VENTRICULAR HYPERTROPHY)	1	12.5%
SHOCKj=11 OUT OF 145 (7.58%)	CARDIOGENIC SHOCK	0	-
	SEPTIC SHOCK	5	46.45%
MISC(N= 4 OUT OF 145) (2.75%)	POST COVID MISC	4	-
METABOLIC ACIDOSIS (N=2 OUT OF 145) (1.37 %)	DIABETIC KETOACIDOSIS	2	-

Table 5: Number of Patients Requiring Respiratory Support

RESPIRATORY SUPPORT	NO. OF PATIENTS (N= 145)	PERCENTAGE
YES	14	9.65%
NO	31	90.36%

Table 6 : Outcome of Patients Requiring Respiratory Support

OUTCOME (N= 145)	PERCENTAGE
DEATH	4(28.57%)
DISCHARGE	10(71.43%)

CONCLUSION

Out of 846 total admission 145 had tachypnoea. Overall occurance of tachypnoea was17. 13 %. Occurance of tachypnoea among 2 months to 12 months was 24.53% and 13 months to 60 months was 11.13 %,more number of infants were suffering from tachypnoea owing to the infantile respiratory anatomy they have.More deaths were observed in infantile age group. More males (62.06%) were involved than females(37.93%).

Acute respiratory tract infection (N=107)(73.79 %)is the most common cause of tachypnea among which, pneumonia was the most common cause of tachypnoea constituting 57 patients (53.27 %) Severe anaemia with Congestive Cardiac Failure was 2nd most common cause- 8.96% and shock constituted 3rd leading cause of tachypnea with 7.58%, underlying cardiac causes constituted- 5.51 %, underlying neurological causes constituted- 4.13%, metabolic causes (DKA) constituted-1.37%.

It was observed in our study that, out of total 14 children who required ventilatory support, 10 patients had survived and 4 had expired. Mechanical ventilation has helped 71.43% critical children admitted with tachypnea to survive.

Tachypnea remains as single most important bed side sign to predict mortality in children of less than 5 years of age. Early identification, referral and treatment will improve the outcome.

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