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The effect of Elevated Prone Position RegardingOxygenSaturation on Children (One Year to Less Than 5 years of Age) with Acute Respiratory Tract Infection

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Abstract*: Respiratory tract infection especially (ARI) is commonin children below 5 years and in severe cases caused oxygen deficiency, so it need correction, the correction by two methods, first you give pt oxygen as order and second method you managing, by changing pt position,(prone elevated prone position, the aims of present study to assess the effect of elevated prone position compare with semi-fowler position.in children from a year age to less than 5year children. GafferIbnaf hospital in (2015-2018) in the pediatrics department (wards), It was a comparative correctional - hospital based study, done inchildren one to less than5years ages admitted to the pediatric emergency department in short stay ward, with acute respiratory tract infection, sample size was (401) and was conducted in Gaffer Ibnaufhospital in Khartoum state, specialized pediatric hospital. .it assessed the oxygen saturation in both position and compared with traditional position (semi- fowler positions). Methods**: Data were collected by standard observation checklist; the numbers of children were (401) and the researcher uses subdivided ages the first (1 to less 2years) and second group (2years less 5 years the semi-fowler position and elevated prone position to assess the oxygen saturation using pulseoximeters, the procedure takes 3minit and ten minutes in between then compare with standards.*
Result: - *According to the SPSS versions 20 analysis, there was statistical significant (0.000) improvement between the two positions, but the newpositionsbetter than the old ones* **.**
Conclusion: - *The study concluded that there is good improvement in elevatedproneposition than the semi-fowler position also the improvement seen in first group morethan the second groupsoit preferable for younger infants (one years to less than 2years) than old children (2years less than five).*

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I. Introduction

Pt positioning now days is a focus of the researches because it aids in pts. management, especially in children with acute respiratory tract infection or those with respiratory symptoms distress and children with asthma. Many studies show their improvement in oxygen saturation. Also helps in the lung clearance and the lung become cleared when the lungs become cleared it takes a lot of oxygen. The body is need oxygen for energy, sometimes and some cases the deficiency of oxygen will occur result of some diseases especially the respiratory diseases [8,9]. The deficiency caused symptoms and signs in term of dyspnea or shortness of breathing, respiratory distress.so the oxygen can be measured by[10,11,12] the pulse oximeter, the normal range of oxygen between the 75 to 100mmHg an less than 60mmHg the pts show signs of respiratory distress and the cases is varying according to their oxygen deficiency it may be mild, moderate and sever. sometimes the O_2management used in mild& moderate cases [13,15,16]. A normal ABG oxygen level for healthy lungs falls between 80 and 100 millimeters of mercury (mm Hg). If a pulse ox measured your blood oxygen level, a normal reading is typically between percent. However, in COPD or other lung diseases, these ranges may not apply. Your doctor will let you know what is normal for your specific condition. For example, it isn't uncommon for people with severe COPD to maintain their pulse ox levels between percent. Below normal**:** A below-normal blood oxygen level is called hypoxemia. Hypoxemia is often cause for concern. The lower the oxygen level, the more severe the hypoxemia. This can lead to complications in body tissue and organs. Normally, a PaO_2 reading below 80 mm Hg or a pulse ox below 95 percent is considered low. It's important to know what is normal for you, especially if you have a chronic lung condition. Your doctor can provide recommendations as to what

ranges of oxygen levels are acceptable for you. Above normal**:** If your breathing is unassisted, it's difficult for your oxygen levels to be too high. In most cases, high oxygen levels occur in people who use supplemental oxygen. This can be detected on an ABG.Assess breathless patients or those who are acutely ill, including those who have acute confusion; Provide an objective indication of the severity of an acute respiratory episode and need for hospital admission – for example, exacerbation of chronic obstructive pulmonary disease, asthma Provide a continuous oxygen saturation recording, for example, during anesthesia or sedation, or in the assessment of oxygenation during sleep studies; Undertake routine monitoring in chronic respiratory disease to screen for suitability for assessment for domiciliary oxygen therapy

II. Result

Table: (1): Distribution: of the study group (subdivided group).

Age group (Yrs.)	Frequency	Percent
1> 2	160	39.9
2- > 5	241	60.1
Total	401	100.0
Mean $\pm$ SD = 2.74 $\pm$ 1.11		

Table: (2) O_2 saturation among the study group-n=401

	Semi- fowler	Elevated prone
N	401	401
Mean	93.7880	98.2394
SD	4.95908	2.28529
Mean $\pm$ SD =93.79+4.96 for semi- fowler position		

Mean $\pm$ SD =98.2+2.26

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1				
Observation 15M semi flower	90.2839	802	51.85423	1.77963
Observation30M elevated prone	80.2108	802	44.35461	1.52225

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Observation 15M semi flower & Observation 30M elevated prone	802	.917	.000

Paired Samples Correlation

		N	Correlation	Sig.
Pair 1	Observation 15M semi flower & Observation 30M elevated prone	802	.917	.000

III. Discussion

The assessment is O_2saturation N=401 which means the semi- fowler's is93, 8 and is 98, 8 in the elevated prone position that means the absolute body tissues saturation for the child in a new position is better than in the traditional one.

In comparison with previous similar studies carried out [(4)] (p=0.031) and the p values of the researcher's study was =0.000(significant) compared with other results.

In this concurrent study the results are highly significant than the other's p=values 0.031[(5).] Some outstanding results (see Table1) showed the age distribution sample size was 401male 211, percent 52.6 and female 190 percent 47.4 most of them were male. Also, we observed the incidence of pts, and that most of them were male. The clinical conditions were pneumonia and malnutrition associated with pneumonia. The interpretation of the data displayed in the tables 1-12 can be read as follows: The result in table1 shows the sex distributions among the study group for one-year children to less than five, with acute respiratory infection or distress.

The total number of the children was 401. The males were 211 with 52.6% and the females were 190, with47.3%. The common clinical conditions of those patients were pneumonia and malnutrition with pneumonia.However, very few of the children were admitted with other different clinical conditions of acute respiratory infection.The results in table1 shows the assessment of respiratory rate among the study group according to the pulse rate standard of the one to less than 5years children, there were two sub groups, the first one is (1less2yrs) and the second one is (2less than 5yrs).The first sub group is 160 and the second oneis241, every child was assessed twice, firstly at semi-fowler position and then at elevated prone position (experimental

position).Table2 indicates the mean of semi-fowler of the first sub group N=160, mean is 32, 7 and for elevated prone 24, 3 and the P values is 0.000 for the two positions. And these means are statically different within the two positions and there is a huge decrease in respiratory rate in a new position (elevated position) than in traditional position (semi-fowler position), Table10 shows O2 saturation among study group. The study population was 401.and the Means for semi-fowler position is 93.7 and the mean for elevated prone is98thatmean there is good body tissues O2saturation in a new Position than in the semi- fowler position or traditional position. This result is supported [(6)] which was done among 25 children with acute respiratory distress syndrome 2-17 month. So many studies proved that the elevated prone position is beneficial in term of oxygen saturation, partial pressure of oxygen, oxygenation index and episodes desideration among hospitalized infants and children with acute respiratory distress, also elevated prone position is good in decreasing pulse and respiratory rate besides it helps with airway clearance. Finally, the elevated prone position is practical than the traditional position.

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