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A study to assess clinical parameters of COVID-19 among antenatal mothers

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Abstract
Background: The present study was aimto assess the clinical parameters of COVID-19 among antenatal mothers at SMCH, Chennai.
Materials and Methods: the quantitative research approach and Non-experimental research design was adopted for present study. 60 antenatal mothers selected by purposive sampling technique. Structured questionnaire was used to collect the demographic variable and observation schedule to assess the leukocyte subset levels among antenatal mothers.
Results: the study outcome results identified that among 60 study participants The demographic variables age (χ^2=8.750, p=0.013), residence (χ^2=6.563, p=0.038), education (χ^2=7.941, p=0.019) and occupation (χ^2=8.594, p=0.014) had shown statistically significant association with Basophil among antenatal mother at p<0.05 level and the other demographic variables had not shown statistically significant association with Basophil among antenatal mother.
Conclusion: This study clearly infers that there was significant improvement was observed in the level of leukocyte subsets were less affected to the antenatal mothers used to provide preventive measures to the antenatal mothers.

Keywords: COVID-19, antenatal mothers, SARS-CoV-2

Introduction

Novel coronavirus (SARS-CoV-2), which reasons COVID-19, has to date affected extra than 15 million individuals, ensuing in greater than 600 000 deaths worldwide, and the range keeps to rise [1]. Women gift method being pregnant, and at the time of childbirth and puerperium constitute potentially inclined populations for COVID-19. Horizontal transmission of SARS-CoV-2 happens thru aerosolised droplets OT thru touch with inflamed surfaces, probably main to the coronavirus ailment 2019 (COVID-19) [2]. Although our knowledge of the disease is growing every day, many answers are though wanted about the diagnostics and the scientific manipulate strategies in the ones groups, the impact of the illness in pregnant ladies and newborn, and the functionality of mother-to-little one transmission. Alterations of pulmonary function, hemostatic changes, and excessive costs of thrombotic headaches were mentioned in sufferers with excessive COVID-19 [3].

The fitness effects of this virus are distressing: death, strained fitness care structures and financial uncertainty [4]. Although some living pointers on COVID-19 intention the pregnancy population, severa clinical questions regarding pregnancy and childbirth live unanswered. The truth of the sickness is actively spreading withinside the global means that we have to put together for the worst; as a consequence, labs international have pooled their efforts to pick out feasible healing methods, estimate destiny development developments of the maximum prone from present records so that you can put together patient-particular measures [5]. It become expected that, for the duration of this outbreak, there has been a lower of twenty-two percent factors in antenatal care coverage, of eight percent.

factors in in-facility delivery, and of thirteen percent factors in postnatal care [6]. The fee of COVID-19 in pregnant and these days pregnant women attending or admitted to medical institution for any reason was spherical 10%. Pregnancy, in standard, does now not appreciably increase the chance of being infected with the resource of the use of SARS-COV-2. Pregnant ladies with extreme acute breathing syndrome (SARS) or center east respiration syndrome (MERS) have critical unfavorable results, including maternal deaths and untimely births, at the same time as no proof of vertical transmission has been found [7]. The human coronavirus is one of the number one pathogens of breathing infections global. The 2 pathogenic coronaviruses, SARS-CoV and the Middle East respiration syndrome-associated coronavirus (MERS-CoV), reason extreme breathing syndrome in people and feature caused international Considering debatable records approximately the path of COVID-19 in pregnant girls and neonates assessment of medical manifestations, maternal and perinatal results in pregnant ladies with COVID-19 have been the primary desires of this research [8]. Successful implementation and scale-up of HIV self-testing (HIVST) in Rwanda is based closely on applicable stakeholders' involvement [9]. Severe acute breathing syndrome in decades. Severe acute respiration syndrome coronavirus (MERS-CoV), reason extreme breathing syndrome in people and brought about international epidemics withinside the beyond decades. Only one occasion of extreme infection become located withinside the unvaccinated organization and no deaths had been determined in both organization. In summary, the BNT162b2 mRNA vaccine changed into expected to have excessive vaccine effectiveness in pregnant girls, that is much like the effectiveness envisioned withinside the trendy population [10].

In this respect, psychopathological symptoms such as anxiety and depression are the most frequently diagnosed. Moreover, adjustment disorders, substance abuse, eating and mood disorders can also appear during this period [11].

Although a few dwelling tips on COVID-19 goal the being pregnant population, numerous scientific questions concerning being pregnant and childbirth continue to be unanswered. The kit runs primer probes through an initial screening for the E (envelope) gene specific to the *Sarbeco* subgenus. Samples were confirmed as positive if either of the two SARS-CoV-2–specific genes, vide RDRp (RNA-dependent RNA polymerase) or ORF-1bnsp14b, were detected [12]. The price of COVID-19 in pregnant and lately pregnant girls attending or admitted to health center for any cause become round 10%. We tested for anhedonia, anxiety, and depression using the Edinburgh Postnatal Depression Scale (EPDS) in the immediate postpartum period [13]. Pregnancy, in general, does now no longer drastically growth the chance of being inflamed through SARS-COV-2. SARS also belongs to the same family of COVID-19, with 25% case fatality rate during pregnancy and various perinatal complications, including disseminated intravascular coagulation, kidney (renal) failure, secondary bacterial pneumonia, sepsis, and abortion [14]. Although some living guidelines on COVID-19 intention the pregnancy population, severa scientific questions regarding pregnancy and childbirth live unanswered. It is widely recognized that physiologic maternal diversifications to being pregnant predispose pregnant girls to a extra excessive path of pneumonia, with next better maternal and fetal morbidity and mortality, however there's a loss of information withinside the literature approximately the impact of CoV infections for the duration of being pregnant, consequently proscribing each counseling and control of those patients [15]. The rate of COVID-19 in pregnant and presently pregnant ladies attending or admitted to health facility for any reason modified into spherical 10%. Pregnancy, in general, does now not appreciably increase the threat of being infected through manner of way of SARS-COV-2.

Materials and methods

60 postnatal mothers who met the inclusion criteria were selected by using purposive sampling technique. After selecting the sample, the investigator explained the purpose of the study and informed consent was obtained. Demographic variables were collected from the antenatal mothers was done. Complete blood count was collected by taking blood samples from the mothers and then clinical parameters of leukocyte subsets were analysed by using frequency and percentage of complete blood count. The data were tabulated and analysed by descriptive and inferential statistics.

Results and discussion

Table 1: Frequency and percentage distribution of demographic variables of antenatal mothers. N = 60

Demographic Variables	Frequency (f)	Percentage (%)
Age group		
20 – 25 years	16	53.4
26 – 30 years	10	33.3
31 – 35 years	4	13.3
Gestational age		
1 – 12 weeks	12	40.0
13 – 26 weeks	16	53.3
Above 26 weeks	2	6.7
Residency		
Urban area	20	66.7
Sub urban	9	30.0
Rural area	1	3.3
Education		
Primary school	12	40.0
Degree	17	56.7
Uneducated	1	3.3
Occupation		
Government employee	8	26.7
Private employee	20	66.6
Unemployed	2	6.7
Previous medical illness		
Diabetes mellitus	8	26.7
Respiratory disease	6	20.0
Hypertension	16	53.3
Duration of illness		
1 – 3 years	10	33.3
3 – 6 years	4	13.3
6 – 9 years	16	53.4
Family history of illness		
Communicable illness	7	23.3
Non-communicable illness	21	70.0
Psychiatric disease	2	6.7

The table 1 shows that most of the antenatal mothers, 16(53.4%) were aged between 20 – 25 years, 16(53.3%) were in the gestational week of 13 – 26, 20(66.7%) were residing in urban area, 17(56.7%) were graduates, 20(66.6%) were private employee, 16(53.3%) had previous medical illness of hypertension, 16(53.4%) had the duration of illness for 6 – 9 years and 21(70%) had family history of illness of non-communicable illness.

Section B: Assessment of Level of Clinical Parameters Of covid-19 Among Antenatal Mothers.

Table 2: Frequency and percentage distribution of level of clinical parameters of COVID-19 among antenatal mothers. N = 60

Clinical Parameters	Normal		Abnormal	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
Total Leucocyte count	13	43.3	17	56.7
Neutrophil	28	93.3	2	6.7
Lymphocyte	23	76.7	7	23.3
Monocyte	30	100.0	-	-
Eosinophil	27	90.0	3	10.0
Basophil	30	100.0	-	-
Absolute Neutrophil count	16	53.3	14	46.7

The above table 2 shows that most the antenatal mothers 17(56.7%) had abnormal total leucocyte count, 28(93.3%) had normal neutrophil, 23(76.7%) had normal lymphocyte, 30(100%) had normal monocyte, 27(90%) had normal eosinophil, 30(100%) ad normal basophil and 16(53.3%) had normal absolute leukocytes count. ormal absolute neutrophil count.

The demographic variables age (χ^2=8.750, p=0.013), residence (χ^2=6.563, p=0.038), education (χ^2=7.941, p=0.019) and occupation (χ^2=8.594, p=0.014) had shown statistically significant association with Basophil among antenatal mother at p<0.05 level and the other demographic variables had not shown statistically significant association with Basophil among antenatal mother.

Taniya Thapa, *et al*., (2022) conducted a study to study the attitude and precautionary practices of non-infected pregnant women during the COVID-19 pandemic in Nepal. A cross-sectional study was carried out interviewing all 195 pregnant women attending an antenatal care outpatient department in Nepal, between 15 March and 16 April 2021, using a pretested questionnaire. Precautionary practices were defined as the practice of social distancing, wearing masks, and sanitizing or washing hands, by the mothers during the antenatal period with a 5-point Likert scale for each item Precautionary practices were categorized into good (≥ median score) and poor (< median score). The majority of the women who participated in this study were from aged 20–29 years (71.7%), were Brahmin (48.2%) and 84.6% Hindu. Since 46.2% of women assumed the close contact of mother to child as safe practice with specific precautions, only 17.9% were willing to isolate themselves if infected by COVID-19. Overall, 35.9% of the respondents were only willing to breastfeed their newborn, even with specific precaution if infected. Nearly half of the respondents (47.2%) had poor precautionary practice during the COVID-19 pandemic and the level of precautionary practices was found significantly associated with age and occupational status. The study concluded that most of the respondents were concerned about the threats of mother to child transmission but found to have poor precautionary practices towards COVID-19.

Mehak Sharma, *et al*., (2021) conducted a study to analyze clinical characteristics among pregnant women. The study was conducted on 17092 samples of pregnant adults whose nasopharyngeal and/or oropharyngeal swab samples were received from various districts of Punjab (Amritsar, Gurdaspur, Hoshiarpur, Kapurthala, Tarn Taran and Pathankot) from the period of March 2020 to December 2020. Confirmation of SAS-CoV-2 was done by RT-PCR. Out of total samples (17092), 374 (2.19%) females exhibited positive results for SARS-CoV-2, and mean age of the pregnant females was 26.37 years. Analysis was performed on 210 (Positive) samples as cases and 210 age matched control females (SARS-CoV-2 negative). Analysis performed demonstrated that SpO2 <96% and co-morbidities such as diabetes and hypertension showed significant association and are common factors in COVID-19. None of the case showed any neonatal and maternal demise. The study concluded that the saturation level of oxygen (<96%), diabetes and hypertension was found to be significant. All the pregnant women have similar symptoms as that of non pregnant adults.

Conclusion

While analysing the clinical parameters of COVID-19 among antenatal mothers by using demographic and complete blood count (leukocyte subset) test, we can able to determine the level of monocyte, lymphocyte, basophil, eosinophil and total neutrophil count. By using frequency and percentage able to detect the clinical infection of COVID-19 present among antenatal mothers. In which we can be able to provide preventive measures among antenatal mothers to prevent further infection.

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