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COMPARISON IN MORTALITY AMONG COVID – 19 POSITIVE IPD PREGNANT WOMEN AND NON PREGNANT WOMEN (SAME AGE GROUPS) IN NORTHWEST ZONE OF RAJASTHAN IN COVID-19 PANDEMIC 2021

Dr. Surendra Kumar*[1], Dr. Surender Kumar[2], Dr. Manoj Mali[3], Dr. Harish Arya[4], Dr. Sandeep Dangi[5], Dr. Kokila R[6], Dr. Wasim Sayed[7]

[1]Additional Principal, Senior Professor and Unit Head; Department of Medicine, [2]Resident Doctor (MD Medicine), [3]Associate Professor, Department of Medicine, [4]Assistant Professor, Department of Medicine, [5]Resident Doctor (MD Medicine), [6]Resident Doctor (MD Medicine), [7]Resident Doctor (MD Medicine)
[1,2,3,4,5,6,7]Department of Medicine S.P. Medical College Bikaner, Rajasthan of India.

***Corresponding Author: Dr. Surendra Kumar**
Additional Principal, Senior Professor and Unit Head; Department of Medicine, Department of Medicine S.P. Medical College Bikaner, Rajasthan of India.

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ABSTRACT

The new corona virus covid-19 was declared a pandemic by WHO on march 2020. The resources of some of the largest economies are stressed out due to large infectively and transmissibility of this disease. Risk factors associated with this diseases are age, sex, presence of comorbidities most common being diabetes hypertension, heart diseases. This study was undertaken to do comparison in between mortality among IPD pregnant women and non pregnant women (Same as group).[1] Here unlike other studies cases and controls are chosen without of any previous comorbidities and only effect of pregnancy as a risk factor is expressed. It is a case control study done a department of medicine S.P. Medical College, Bikaner (Rajasthan). 106 covid positive patients were part of study out of which 56 are pregnant (cases 52%) and 50 are non pregnant (control 48% women) average age was only 22 years. Mortality and mean duration of hospital stay among pregnant women were (32%), 22 days respectively is higher than non pregnant women. 16%, 14 days. Early diagnosis of covid 19 infection in pregnancy will help physician to treat them optimally.

INTRODUCTION

Since November 2019 the rapid outbreak of corona virus disease 2019 which arose from severe acute respiratory syndrome corono virus 2 (SARS: Cov2) infection has become a public. Health emergency of international concern[2] covid 19 has attributed for enormous adverse impact globally.

Covid 19 is contagious during its latency period. It is highly transmissible in humons especially in the elderly people and people with underlying diseases and comorbidities like type 2 diabetes mellitus, hypertension, cardiovascular, cerebrovascular diseases. Like them pregnancy due to immunological changes it self lead to more severe and fatal covid 19 infection.[3] In another study out of 73 patients 31 were admitted for management of covid 19 symptoms. Among the 31 patients 8(26%) required intensive care unit admission, 6(19%) required intubation and mechanical ventilation.[4]

Furthermore pregnancy BIAS towards T helper 2 system dominance which protects the fetus leaves the mother vulnerable to viral infections which are more effectively controlled by the T helper 1 system.

In this study objective being to despite mild symptomatic at admission here is more mortality and ICU admission rate than non pregnant females of same age.

AIM

1. To evaluate the comparison among covid positive IPD pregnant women and IPD non pregnant women (Same age group) mortality.
2. To study the serious complications and there comparison among both groups.
3. To evaluate the rate of ICU admission and duration of hospital stay between both groups.
4. To showing the rate of preterm labour and cesarean section among covid positive pregnants.

Study Design: All consecutive patients with confirmed covid 19 infection admitted PBM hospital, Bikaner from 1/03/2021 upto submission of paper were enrolled. Oral consent was obtained from patient. The clinical outcomes i.e. discharges, mortality and length of hospital stay, complication were monitored upto submission of paper.

Data Collection

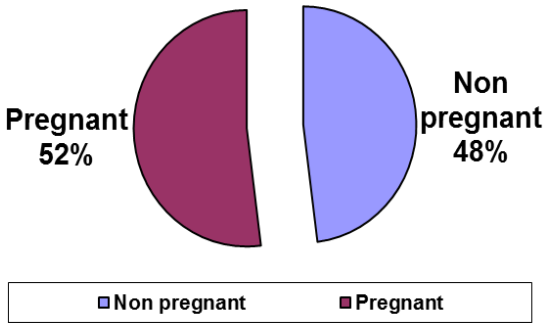
The medical records of patient were analyzed by the reseach team of department of medicine P.B.M. Hospital, Bikaner. Epidemiological, clinical laboratory and radiological characteristics and treatments and outcomes data were obtained with data collection forms from electronic medical records and the history given by patients. All data was reviewed by internal medicine specialist. Information recorded included demographic data medical history of exposure, history of underlying comorbidities symptoms signs measures (Antiviral therapy and antiretroviral therapy) Antimalarial therapy respiratory support. Berlin definition were used to define ARDS.

Sample collection and analysis

Throat swab sample were collected for enhancing 2019 ncov. RNA from patients suspected of having 2019 ncov infection. And were placed into a collection tube containing virus transport medium for entraction of total RNA. This process was tried to be completed in minimal possible time. Optimal amount cell lysates were transferred into a collection tube and were later centrifuged. The suspension was used for RTPCR assay of 2019 ncov-rna. This dignositic criteria was based on the recommendation by national institute of virology. (Pune)

RESULT

106 consecutive lab confirms COVID-19 positive patients were included in the study out of which 56 were pregnant (Cases 52%) & 50 are nonpregnant (confirmed 48%). The Median age of 22 years (19 to 34 years) & was almost similar for both pregnant (22 years) & non pregnant females (20 years)



Age Wise Distribution.

Age Group	Pregnant	Non Pregnant
19-22	**22**	**19**
23-26	**16**	**10**
27-30	**10**	**10**
31-34	**8**	**11**

Out of 106 patients 62 (58%) patients has history of contact with a known COVID-19 positive case while 44 (48%) had history of travels interstate and outside of India.

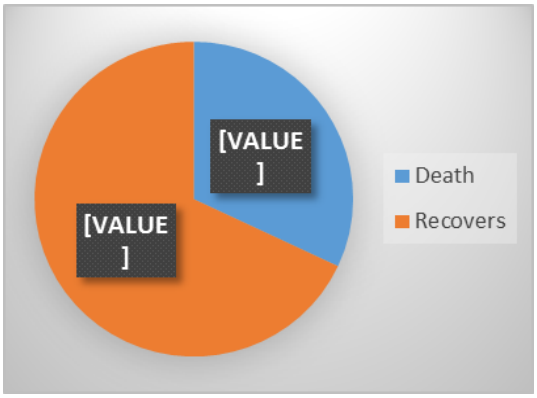
At the time of admission following parameter are used.

WBC	**Normal Range 4.5-11.00 k**	**Pregnant (n= 56) Mean 9.29**	**Non Pregnant Mean (n = 50) 9.91**
Neutrophils	50-70%	72%	79%
Lymphocytes	20-40%	16%	14%
Hemoglobin	11.00-15.0 mg/dl	9.1	9.6
Platelets	150 -450 K/cumm	213 K	312 K
S.Cr.	0.5-1.5 mg/dl	0.9	1.2
B. Urea	15-45 mg/dl	38	29
AST	5-40 U/L	31	36
ALT	7-56 U/L	22	28
Bilirubin	0.1-1.1 mg/dl	0.8	0.44
LDH	80-524 U/L	602	641
SCRP	0-6.0 mg/dl	39	32
D-dimer	0-0.5 g/l	2.8	2.1
Blood gas			
pH	7.35-7.45	7.32	7.35
PO_2	80-100	86	78
PCO_2	35-45	38	42
HCO_3O	22-28	36	41
SPO2 on abdomen	≥ 97%	84%	87%
B/L chest X-ray With-abdominal shield		Pulmonary infiltrate present in 13%	Pulmonary infiltrate present in 17%

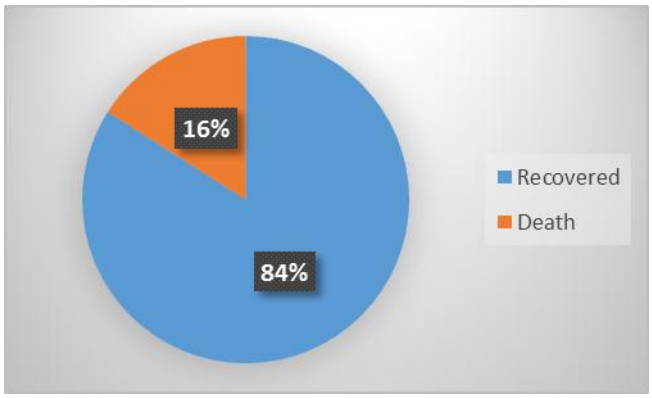
HRCT is not included because radiation exposure present in females.

Out of 106 patients →56 are pregnant females among them 68% patient recovered completely & 32% succumbed to disease.

In 50 non pregnant admitted females 84% patients recovers completely & discharged & 16 % succumbed to death.



(Pregnant Females)

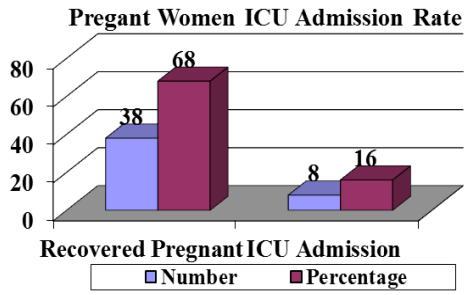


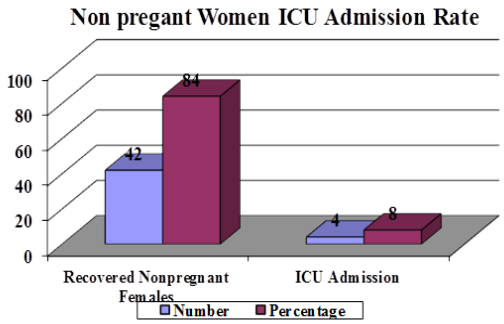
Non pregnant females

Age Group	Total (Pregnant)	Dead (Pregnant)	Non Pregnant Total	Dead (Non Pregnant)
19-22	22	7 (38%)	19	3 (37.5%)
23-26	16	4 (22%)	10	1 (12.5%)
27-30	10	4 (22%)	10	2 (25%)
31-34	8	3 (18%)	11	2 (25%)

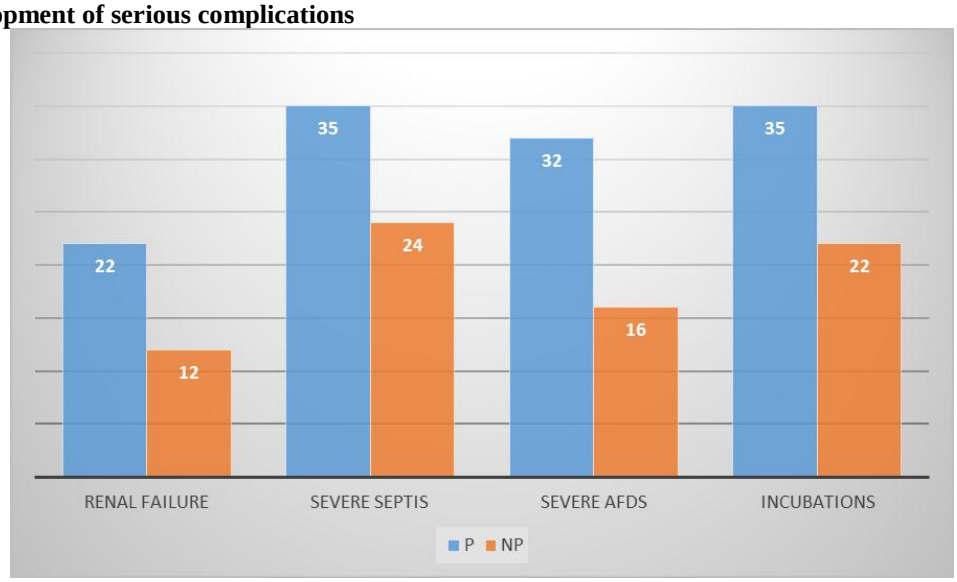
Rate of ICU Admission

Among 68% pregnant ladies who had recovered 16% per admitted in ICU & among 84% non-pregnant ladies who had recovered 08% were admitted in ICU.





Rate of development of serious complications



Mean duration of stay for recovered patients was 19 days for present female it was 22 days while for non-pregnant females 14 days.

In recovered covid 19 pregnant females caesarian section done in 10 (11%) females to reduce mortality and premature delivery was seen in 5 (8%) females.

During hospital admission both pregnant and non pregnant females have same status and comorbidities among them were excluded.

In this study odds ratio is 2.5 which is > 1. Suggests that pregnancy its self causes severe covid 19 infection with worse outcome.

DISCUSSION

The ongoing covid 19 pandemic 2nd wave has changed the face of world in 2021. It has caused huge loss of life and livelihood and had pushed the global health system in abyss. This study was undertanken to access the recovery rate speed of Recovery and recovery pattern of covid positives among pregnant and non pregnant lady. All confounding factors are tried to be removed and here is a face of severity of covid 19 infection in pregnancy is much more than non pregnant lady. ICU admission rate in pregnant is much more (16%) as compared to non pregnant lady 8%. Which create contrast with Mathew J. Blitz Study[5] and it matches with some important studies.[6-9]

Stay in hospital among pregnant female and rate of ICU admission and death is more in pregnant female as compared to non pregnant females. Which is similar with Creanga et al 2010,[11] Jamieson et al 2009,[12] Lam et al 2001[13] and some other new studies in recent years. Rate of caesarian[6-9] sections and premature delivery in all pregnant was respectively 11% and 8%. Which is similar to Xu Onacheny Study.[10]

In pregnant females rate of complications like renal failure (22%), Severe sepsis (35%), Severe ARDS (32%) and rate of intubation (35%) are high than non pregnant females respiratory failure 12%, severe sepsis 24%, severe ARDS 16% and intubation 22% similar to Crenga et al 2010 study.[11]

CONCLUSION

Pregnant women with severe and critical corona virus disease 2021 are at increased risk for certain morbidities and high mortality when compared with non pregnant.

Serious complication like ARDS, severe sepsis, Shock are also high in pregnant females than non pregnant of same reproductive age group. So pregnancy it self emerges as a risk factor for pneumonia and ICU admission and death in SARS cov-2 than infected women of reproductive age. All of these are attributed to immunological modifications and physiological changes during pregnancy which makes pregnancy more vulnerable for more severe covid 19 outcomes.

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