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Submission date: 04-Apr-2022 02:39PM (UTC+0900)
Submission ID: 1800905034
File name: 1._new_JNP_turnitin.doc (268K)
Word count: 3537
Character count: 20473

Detection of Asymptomatic Cases of Covid-19 Pregnant Women: A Systematic Review

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ABSTRACT

Background: There have been many cases of the Covid-19 corona virus detected in pregnant women. Data posted by the Centers for Disease Control and Prevention (CDC) shows that around 55 percent of pregnant women who are confirmed Covid-19 and hospitalized are asymptomatic.

Purpose: The purpose of this study to systematically review detection asymptomatic Covid-19 cases of pregnant women.

Methods: The articles were selected from WorldCat, ProQuest, EBSCO, and PubMed Database journal published from January to April 2020. "COVID-19" OR Coronavirus OR "Corona virus" OR Coronaviruses OR "2019-nCoV" OR "SARS-CoV" OR "MERS-CoV" AND Asymptomatic AND "Pregnant Women" were the keywords included for this review. Articles in English or Indonesian language that published or in press article about COVID-19, focusing in the detection asymptomatic Covid-19 cases of pregnant women, and the type of study is cohort were inclusion criteria. The articles using language rather than English or Indonesian were excluded. Articles for which no abstract and no provided any significant information was in the exclusion criteria.

Results: A total of 628 articles achieve from the databases, the authors identified 12 articles were analyzed.

Conclusion: Based on the results of a review of several article it can be concluded that pregnant women who do not have symptoms of Covid-19 show a large enough percentage and have a greater risk of receiving intensive care compared to women who are not pregnant.

Keywords: Asymptomatic, Covid-19, Corona, Pregnant Women

BACKGROUND

Pregnant women are considered vulnerable because of the adaptive physiological changes during the Covid-19 pandemic, so they may be more inclined to COVID-19 than the general population. Due to the rapid development of the Covid-19 pandemic, the care of pregnant women and the safety of the fetus are of utmost concern. However, there is little evidence on the evaluation and treatment of pregnant women infected with COVID-19, and the possible dangers of spreading the infection from mother to fetus are still puzzling (Yu et al., 2020).

Obstetric patients have multiple links to health care agencies and the majority are admitted to health care services during childbirth, so they have unique challenges during the Covid-19 pandemic (City et al., 2020). Now is currently known about the proper management of pregnant women during the Covid-19 pandemic. Primarily based on an extensive literature review, the worldwide Society of Infectious illnesses in Obstetrics and Gynecology (ISIDOG) presented a advice to provide steering for health care professionals who treat pregnant sufferers and which turned into applied in writing in countrywide health policies.

Although pregnant women do not have concede immunity, the immunological adjustments of pregnancy can lead to a kingdom of extended susceptibility to positive intracellular pathogens, specifically viruses, micro organism and intracellular parasites (Jamieson et al., 2006). Measles, number one varicella, influenza, variola (smallpox), Lassa fever, Ebola and SARS are examples of viral infections, in which pregnant women are greater liable to infection and expand a extra intense disease trouble and better mortality fee (Journal et al., 2003)(Lam et al., 2004).

As for Covid-19, the reproduction rate or in other words the average number of people transmitted by people infected with the virus during the peak of the epidemic was between two and three times (range 2.5-2.9), somewhat higher than for influenza (Peng et al., 2020). It has lengthy been recognized that pregnant women are not always more liable to viral illnesses, however changes in their immune device during pregnancy can be related to more intense signs. SARS-CoV and MERS-CoV are recognized to reason intense headaches all through being pregnant. however, there may be currently no proof that pregnant women are greater susceptible to COVID-19 contamination or that those with COVID-19 are greater liable to excessive pneumonia. consequently, Covid-19 all through being pregnant may boom the risk of maternal venous thromboembolism (VTE). up to now no vertical transmission, teratogenicity or early miscarriage have been stated inside the literature.

Pregnant women with Covid-19 infection may experience more severe symptoms than women who are not pregnant. Limited data report rapid deterioration in women who are asymptomatic at the time of health care and are later diagnosed with severe COVID-19. In some, but not all, pregnant women, maternal comorbidities were found during examination (hypertension, diabetes, chlestasis of pregnancy) (Breslin, Baptiste, Miller, et al., 2020).

Early literature on Covid-19 in pregnant women centered on symptomatic patients who later tested high excellent for the virus (Alfirevic et al., 2020). But, several recent courses suggest the threat of non-symptomatic contamination amongst pregnant and childbirth women. The said prevalence of non-symptomatic Covid-19 contamination among pregnant women is specifically outstanding, as signs and symptoms and signs of past due pregnancy and even uninvolved delivery may overlap with signs of Covid-19 contamination. curiously, the excessive percentage of asymptomatic infections amongst delivery mothers (Breslin, Baptiste, Gyamfi-Bannerman, et al., 2020)(City et al., 2020) recommend that nonspecific signs in pregnant sufferers may be associated more regularly with being pregnant than with Covid-19 signs and symptoms. This supports a low threshold for testing pregnant women with effective instances of Covid-19, even

though they present with signs that occur in a normal being pregnant; this is specifically important in groups with excessive Covid-19 contamination charges.

Current reviews of asymptomatic Covid-19 infections raise issues about the accuracy of current checks. In non-pregnant women, fake bad Covid-19 RT-PCR outcomes had been stated in up to 18% of radiologically showed cases (Long et al., 2020). When adjusted for data presented by Sutton and colleagues (City et al., 2020), where nearly 90% of women giving birth are non-symptomatic, this error rate implies a large number of undetected infections among obstetric sufferers, due to a combination of symptom-primarily based checking out and trying out mistakes.

Ordinary, the available records advocate that a big wide variety of pregnant and transport women with Covid-19 may be non-symptomatic or may additionally have signs but the signs are related to a everyday being pregnant; furthermore, those ladies might also have false bad RT-PCR outcomes. As part of the consideration of obstetric care, and specially in communities and establishments with a high burden of Covid-19 contamination, regulations are needed to mechanically compare women giving delivery as being at excessive risk for Covid-19 infection and to inspire conservative regulate that make sure surest patient care, and readiness of fitness carrier companies.

It isn't yet recognised what's the pleasant method for handling Covid-19 all through pregnancy and childbirth. but, it's far pretty clean that we want to recall no longer simplest epidemiological and scientific elements, however also organizational, social and political troubles. assessments performed universally on all treated pregnant ladies are an awesome opportunity to determine incidence most of the population. based totally on this rationalization, researchers are interested by systematically reviewing the detection of Covid-19 pregnant women with asymptomatic cases.

OBJECTIVE

The objective of this systematic review was to detection asymptomatic Covid-19 cases of pregnant women

METHODS

1. Study Design

This study evaluate is based totally on the reporting items for the PRISMA systematic overview and guidelines. A literature search was carried out from September to October 2020. Article for systematic reviews were obtained from WorldCat, ProQuest, EBSCO, and PubMed. Keywords to search for this article included: "COVID-19" OR Coronavirus OR "Corona virus" OR Coronaviruses OR "2019-nCoV" OR "SARS-CoV" OR "MERS-CoV" AND Asymptomatic AND “Pregnant Women”

2. Inclusion and Exclusion Criteria

The inclusion criteria for articles are articles in English or Indonesian and published articles about COVID-19, with a focus on detecting asymptomatic cases of Covid-19 pregnant women, and the type of research is cohort. Exclusion criteria in this study include articles that use languages other than English or Indonesian, articles that do not display abstracts and do not provide complete information.

3. Data Extraction

Articles from WorldCat, ProQuest, EBSCO, and PubMed using the Mendeley program were collected and the author obtained a total of 628 articles. Articles were selected using Featured Reporting Items for Systematic Review and the PRISMA method. A total of 12 selected articles were included for analysis in this study.

4. Data analysis

Study articles are systematically reviewed and qualitatively analyzed.

RESULTS

From 628 articles collected through preliminary searches on WorldCat, ProQuest, EBSCO, and PubMed, the authors included 12 articles on detecting asymptomatic Covid-19 cases in pregnant women in 2019-2020. The selection process in detail is illustrated in Figure 1.

Most of the articles explained that pregnant women who came to health care facilities did not show any symptoms of Covid-19. However, when laboratory tests were carried out, the number of positive confirmed Covid-19 was quite high. Most of these pregnant women have mild symptoms even like the symptoms of pregnant people in general. Several studies have not found any symptoms of Covid-19 such as coughing, fever, or difficulty breathing.

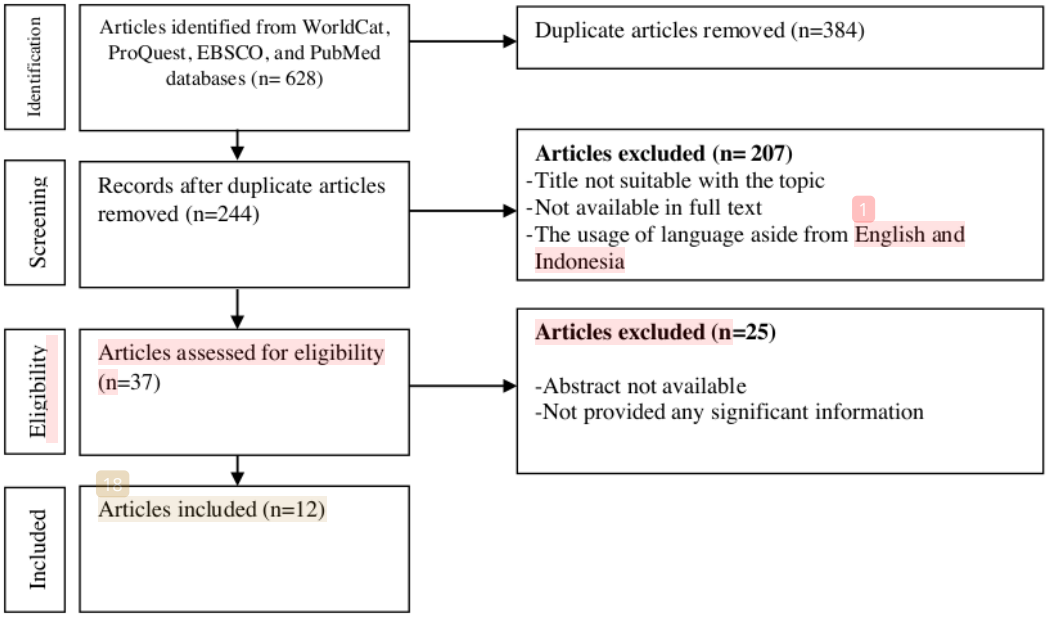

Figure 1. PRISMA Flow Diagram

Table 1. Evidence Table

No	Author (Year)	Purpose	Study Design	Sample	Results
1.	Viktoriya London, Rodney McLaren Jr., Fouad Atallah, Catherine Cepeda, Sandra McCala, Neli Fisher, Janet L. Stein, Shoshana Haberman, Howard Minkof (2020)	This study aims to compare symptomatic and asymptomatic pregnant women with COVID-19	retrospective cohort	Pregnant mother positive for Covid-19	Eighty-one patients tested positive (symptomatic [n = 60] or exposure only [n = twenty one]) and seventy five patients were tested (all non-symptomatic). In total, there were forty-six symptomatic and twenty two asymptomatic pregnant women (tested on exposure alone [n=twelve] or as part of universal screening [n = ten]) with positive COVID-19. Of the symptomatic pregnant women (n = forty six), 27.3% had experienced premature birth and 26.1% needed respiratory support while those who were not asymptomatic (n 22) had preterm labor or needed respiratory support (p = 0.007 and p = 0.01)(London et al., 2020)
2.	Noelle Breslin, Caitlin Baptiste, Cynthia Gyamfi-Bannerman, Russell Miller, Rebecca Martinez, Kyra Bernnstein, Laurence Ring, Ruth Landau, Stephannie Purisch, Alexander M. Friedman, Karin Fuchs, Desmond Sutton, Maria Andrikopoulou, Devon Rupley, Jean-Ju Sheen, Janice Aubey, Noelia Zork, Leslie Moroz, Mirela Mourrad,	presenting experience with positive COVID-19 during pregnancy in hospital of NewYork City more than 2 week between March 13, 2020, and 27 March 2020	cohort	43 pregnant women confirmed Covid-19	It was found that pregnant women with COVID-19 came with the usual complaints of pregnancy or that most of the referred patients were asymptomatic (Breslin, Baptiste, Gyamfi-Bannerman, et al., 2020)

	Ronald Wapner, Lynn L. Simpson, Mary E. D'Alton, Dena Goffman (2020)				
3.	Atakan Tanacana, Seyit Ahmet Erola, Batuhan Turgaya, Ali Taner Anuka, Ellcin Islek Secena, Gulin Feykan Yegina, Sebnnem Ozyera, Fisun Kircad, Beedia Dinc, Serpil Unlue, Elif Gul Yappar Eyia, Huseyin Levennt Keskina, Dilek Sahina, Aziz Ahimet Surelf, Ozlem Moraloglu Tekin (2020)	investigated rates of SARS-CoV-2 positive in hospitalized asymptomatic pregnant women	Prospective cohort	206 asymptomatic pregnant women	three of the 206 pregnant ladies who participated in the have a look at had a advantageous RT-PCR check (1.4%) and all fantastic instances have been in the excessive-danger being pregnant group. while, one of the instances within the excessive-threat being pregnant group had proven very suspicious symptoms for COVID-19, two repeated RT-PCR assessments have been bad (Tanacan et al., 2020)
4.	Murat Yassa, Cihangir Yirmibes, G Cavusoglu, Hazaal Eksi, Cevdet Dogu, Cannberk Usta, Memis Alli Mutlu, Pinar Birol, Cagri Gulumser & Niyazi Tug (2020)	presents the overall prevalence of SARS-CoV-2 infection rates and hospitalized asymptomatic pregnant women, and assesses the diagnostic accuracy of maternal symptoms	Prospective cohort	Women who are confirmed to be pregnant	The one-month universal trial of SARS-CoV-2 infection by RT-PCR in hospitalized pregnant women showed an overall diagnosis of infection and asymptomatic rates of 7.77% and 4%, respectively (Yassa et al., 2020)

		and pulmonary ultrasound (LUS) findings in detecting infection			
5.	Asma Ansari, Farhat Karim, Rabiya Akbar , Uzma Urooj, Hafsa Khalil, Nighat Shafiq (2020)	determine the incidence of SARS CoV-2 (COVID-19) infection among hospitalized women and their severity	Prospective cohort	Pregnant mother	primarily based on PCR testing of 525 moms who gave beginning in the course of the study period, 43 (8.1%) had been nice for COVID. Of the total patients screened, 484 (92%) were symptomatic and forty one (7.8%) have been display screen superb. 20 (48.7%) were additionally PCR high-quality. in step with disorder severity, 28 (65%) patients were asymptomatic 10 (23%) had moderate, 4 (9.3%) mild and excessive (1%). COVID categories for high-quality and bad screening patients have been compared and statistically extensive for advantageous screened patients ($p<0.0001$) (Ansari et al., 2020)
6.	M Prabhu, K Caginno, K C Mathews, R L Friedllander, S M Glyn, J M Kubiak, Y J Yang, Z Zhao, R N Baergen, J I Di Pace, A S Razavi, D W Skupski, J R Snnyder, H K Singh, R B Kalish, C M Oxford, L.E Rilley (2020)	describe the distinction in outcomes between pregnant girls with and without COVID-19	Prospective cohort	Pregnant women with gestational age > 20 weeks	Of the 675 treated women, 10.4% were positive for SARS-CoV-2, 78.6% of them were asymptomatic (Prabhu et al., 2020)
7.	E.Ferazi, L Frigerio, V Savasi, P Vergani, F Prefumo, S Baresi, S Bianchi, E. Cirielo, F Fachinetti, M	report the mode of delivery and the delivery of the baby to women infected with COVID-19	retrospective cohort	Pregnant woman who is confirmed positive for COVID-19	This is constant with the truth that this syndrome is commonly slight or moderate in pregnancy and it's miles very probably that many inflamed pregnant women are asymptomatic or with symptomps (Ferrazzi et al., 2020)

	T Gervassi, E Iurlaro, A Kustermann, G Mangili, F Mosca, L Patanè, D Spazzini, A Spinillo, G Trojano, M Vignalli, A Villa, G V Zuccotti, F Parazzini, I Cetin (2020)				
8.	Whitney R. Bender, Sindhu Srinivas, Paulina Coutifaris, Alexandra Acker, Adi Hirshberg (2020)	describe the mental reviews of asymptomatic obstetric sufferers in inpatient and early postpartum tested for breathing syndrome-coronavirus-2 (SARS-CoV-2) acute/extreme as part of a everyday trying out application and document on the effect of this software on labor and transport fitness care people	cohort	asymptomatic pregnant women undergoing Testing for SARS-CoV-2	318 non-symptomatic women trying out for SARS-CoV-2 over a 2-week length. Seventy-five percent who tested effective reported negative. among 310 women who examined negative, 34.4% of multiparous mentioned multiplied postpartum tension in comparison to previous deliveries due to issues approximately exposure to infectious marketers inside the hospital and lack of social help. (Bender et al., 2020)
9.	Marian Knight, Kathryn Bunch, Nicolla Voussden, Edward Morris, Nigel	describes a national cohort of pregnant women who hospitalized with severe acute	Prospective cohort	427 pregnant women were hospitalized with Confirmation of	In the context of the ongoing Covid-19 pandemic the collection of data on the outcome of infection during pregnancy becomes very important. However, unanswered questions regarding the extent and effect of asymptomatic or mild infection (Knight et al., 2020)

	Simpson, Chris Gale, Patrick O'Brien, Maria Quiglley, Peter Brocklehurst,Jennifer J Kurinczuk (2020)	respiratory syndrome (SARS-CoV-2), identify factors associated with infection, and explain the results, along with transmission infection, for mother and baby		SARS-CoV-2 infection between March 1st 2020 and April 14, 2020	
10.	Giovanni Nazzaro, Mariavittoria Locci, Maurizio Guidda, Attilio Di Spiezio Sardo, Pierluigi Beneddetti Panici, Vincenzo Berghella, Maria Elenna Flacco, Lamberto Manzoli, Giusepe Bifulco, Giovanni Scambia, Fulvio Zulo and Francesco D'Antonio (2020)	evaluate the strength of the relationship between characteristics of the mother and pregnancy and the risks to adverse perinatal outcome in pregnancy with confirmed COVID-19	cohort	pregnant woman with confirmation COVID-19	The mean gestational age at diagnosis was 30.6 ± 9.5 weeks, with 8.0% of women diagnosed in the first case, 22.2% in the second and 69.8% in the third trimester of pregnancy. Asymptomatic cases by 24.2% (Di Mascio et al., 2020)
11.	Ignacio Heraiz, Dolores Folgueira, Cecilia Vilalaín, Laura Forcén, Rafael Delgado and Alberto	evaluate universal performance screning for SARS-CoV-2 using quantitative reverse transcrption polymerase-	retrospective cohort	pregnant women who are about to give birth and have given birth between April 8	There had been 212 deliveries. 9 cases with a analysis of COVID-19 previous to admission. 203 ladies were referred with COVID-19 signs and symptoms however simplest one had a tremendous qRT-PCR. among 194 non-symptomatic women, most effective one case (0.five%) changed into wonderful (Herraiz et al., 2020)

	Galindo (2020)	chain-reaction (qRT-PCR) assay		and May 2 2020 at a big maternity in Madrid	
12.	Stefano Cosma, Fulvio Borela, Andrea Caroso, Andrea Sciarone, Jessica Cusato Bsc, Silvia Corcione, Giulio Mengozzi, Mario Preti, Dionysios Katsaros, Giovanni Di Perri, Chiara Benedeto (2020)	evaluate cumulative incidents SARS-CoV-2 infection during the first trimester of pregnancy	cohort	Pregnant woman	The cumulative prevalence of COVID-19 all through first trimester turned into 10.1% with a high incidence of non-symptomatic sufferers (42.8%). just like the direction of disorder in nonpregnant adults, 80% to ninety% of non-severe infection signs were suggested to be four instances higher in Covid-19 positive sufferers (fifty seven%) than in people who were terrible (thirteen%) ($P < 0.001$), this suggests that direct self-trying out should be open to COVID-19 confirmatory testing (Cosma et al., 2020)

DISCUSSION

From the several articles above, it is known that most pregnant women suffer from Covid-19 without symptoms (asymptomatic). One study stated that the majority of respondents (97%) were asymptomatic patients or had mild symptoms such as fever or cough so they did not require oxygen therapy (Harishchandra et al., 2020). At the time of the primary said case of a pregnant lady with asymptomatic COVID-19 contamination, asymptomatic COVID-19 pregnant girls with precise records have been rarely said. there has been no fever, cough, or dyspnea, and everyday blood checks confirmed a everyday white blood mobile don't forget and a everyday lymphocyte remember. The affected character confirmed asymptomatic infection before gift procedure surgery, considering that there are no precise antiviral pills for COVID-19 contamination and antiviral pills, this may have a chance to the protection of the fetus, because simplest conventional remedy consisting of inhaled oxygen and oral iron administration may be carried out. After surgical procedure, mothers in labor are advised no longer to breastfeed their babies, consequently, antiviral remedy is given (Lu et al., 2020).

Caring for pregnant women all through the SARS-CoV-2 pandemic is a scientific challenge due to the fact no longer best are they more liable to infectious outbreaks because of physiological changes, however there is additionally a vital want to hold the health of the fetus. Obstetric patients, unlike other clinically susceptible groups, still need to get right of entry to fitness offerings on a regular foundation and are probable to require unique permission for referral. Obstetric instances permit early identity of asymptomatic through the examiner. This proves that it's far important to use suitable PPE and effective control of maternity services to facilitate fine patients in order that they can be remoted.

In a single study, thirteen pregnant women confirmed mild or asymptomatic COVID-19 nice, together with 15.four% (2/13) had prenatal fever and 61.6% (eight/thirteen) had postpartum fever, and 15.4% with cough, and none had myalgia or fatigue, hemoptysis, headache, palpitations, diarrhea or dyspnea (Yang et al., 2020). a high probability of asymptomatic presentation indicating fewer pregnant women and young pregnant women with COVID-19 manifest symptoms than non-pregnant women. This may be due to the universal screening strategy for COVID-19 in pregnancy and the low threshold for screening non-pregnant patients. Despite the possible strategies above for detecting pregnant women with mild disease, investigators have observed increased admittance to intensive care units and the need for invasive ventilation compared to nonpregnant women with COVID-19 (Allotey et al., 2020).

Mentioned asymptomatic being pregnant charges range from forty three percent to eighty nine percent, with an estimate of four to 9 undetected instances in keeping with every symptom. This helps general screening as a feasible method. in the look at there was a high charge of bias in reporting (sufferers had been asymptomatic but have been detected as advantageous cases whilst an in-depth records changed into carried out) of nearly 70%. that is because of the fact that the wide variety of signs of COVID-19 overlaps with the physiological adjustments at some stage in pregnancy. The above focus the priority of symptom evaluation according to traditional running procedures, the want for proper patient schooling about signs and signs and symptoms and the capability boundaries of diagnostic strategies based on patient symptom reviews, almost 50% of whom are asymptomatic.

Universal screening of people who are not included in the screening group at delivery, should be examined in endemic areas that provide a good estimate of the prevalence of Covid-19 infection at the general population level, allow for adequate health team protection, appropriate patient isolation, Neonatal diagnosis immediately after birth and what follow-up should be done (Pilar Dı´az-Corvillo´n, Max Mo¨ nckeberg, Antonia Barros & Arturo Soldati1, Jyh-Kae Nien, Manuel Schepeler, 2020).

CONCLUSION

Based on the results of a review of several literatures, it can be concluded that pregnant women who not showing Covid-19 symptoms show a large percentage and have a greater risk of receiving intensive care compared to women who are not pregnant. In several articles reviewed, it was stated that during the study pregnant women tended to not show any symptoms including fever. This is different from what happened in non-pregnant patients where Covid-19 symptoms such as stones, fever, difficulty breathing were experienced by these patients.

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