

Myocardial Infarction in Pregnant Women

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Abstract: Background: Acute coronary artery disease is estimated to happen between three and ten times per 100,000 live births. Acute pregnancy-related cardiovascular disease, albeit uncommon, is a terrible disorder that may kill both the mother as well as her unborn child. According to studies, case fatality could exceed 37%. **Objective:** This paper aims to analyse the outcomes of myocardial infarction in pregnant women. **Patients and method:** This paper was contributed to analyse and assess myocardial infarction in pregnant women; where it focused on pregnant women who have ages older than 25 to 45 years which find on myocardial infarction patients with 48 cases within different hospitals in Iraq from 16th June 2021 to 27th August 2022. The data collected were analysed and determined of outcomes by the SPSS program. **Results and Discussion:** Our study discovered that hypertension, a risk factor in preeclampsia with a condition more frequent in black women, is the cause of the relationship between pregnancy-related acute cardiovascular disease and hypertension. Obesity and age above 30 have been identified as substantial risk factors for pregnancy-related myocardial infarction. Because the risk of myocardial infarction increases with age and is higher in overweight women. Hypertension, postpartum infection, obesity, diabetes, and an increased risk of thrombosis have all been known to be more common in pregnant women. Thrombophilia has been discovered as a risk factor underpinning myocardial infarction in young women but not as a risk associated with acute myocardial infarction during pregnancy. **Conclusion:** Diabetes and hypertension impacted women after surgery, according to our data: postpartum hemorrhage and infection-induced changes in heart rate during post-operative recovery. Mothers with advanced maternal age, documented thrombophilia, particularly postpartum problems, and smokers should be prioritized for screening and preventive treatments.

Keywords: Myocardial infarction; Hypertension; Diabetes; and ICD-9cm scale.

INTRODUCTION

Acute coronary artery disease is estimated to happen between three and ten times per 100,000 live births. Acute pregnancy-related cardiovascular disease, albeit uncommon, is a terrible disorder that may kill both the mother as well as her unborn child. According to studies, case fatality could exceed 37% [Gordon, M, 2002]. Given that only around 12 women out of every 100,000 die throughout being pregnant, a single death from an acute myocardial infarction has a major impact on maternal mortality. [Manson, J.E. *et al.*, 2003; Tanis, B.C. *et al.*, 2001]

At the very least, oral estrogenic and progestins have been related to a greater likelihood of cardiovascular disease. When utilizing hormone replacement therapy, the risk of coronary artery disease increases by 24%, and it doubles when using contraceptive pills. Other factors may aggravate pregnancy-related hazards. [Ventura, S.J. *et al.*, 2001- McGovern, P.G. *et al.*, 2001]

Although pregnancy-related acute heart disease is uncommon, measuring its frequency, identifying risk factors, and recording outcomes such as

mortality is challenging. Large-scale population studies are required. [Härtel, D. *et al.*, 2003 - Petitti, D.B, 2003]

A population-based study involving pregnancy-related heart attacks throughout California was recently published, but national figures have not. In contrast, many medical conditions and obstetric problems are identified in hospital discharge data gathered by the National Sample of Inpatients (NIS), enabling for the evaluation of risk factors for pregnancy-related cardiac arrest. [ACOG, 2000- Hannaford, P. *et al.*, 1997]. The purpose of this paper is to examine the consequences of myocardial infarction, or MI, in pregnant women.

PATIENTS AND METHOD

This paper was contributed to analyse and assess myocardial infarction in pregnant women; where it focused on pregnant women who have ages older than 25 to 45 years which find on myocardial infarction patients with 48 cases within different hospitals in Iraq from 16th June 2021 to 27th August 2022. The data collected were analysed and determined of outcomes by the SPSS program.

Following that, this article examined diagnosis regarding features of myocardial infarction (MI) patients according to ages ranging from 25 to 45 years, BMI of 28.6 and >28.6, as shown in Tables 1 and 2.

This study distributed causes of acute myocardial infarction patients such as Atherosclerosis, SCAD, Spasm, as well as Thrombosis in addition to distributions of symptoms of acute myocardial infarction patients such as chest pain, diaphoresis, nausea, dizziness, shortness in breath, along with tachyarrhythmias, and smoking, alcohol use, comorbidities such as Anemia, Type 2 diabetes, and Hypertension.

To move the data examination forward, this paper determined the location of Acute Myocardial Infarction, which includes the anterolateral,

Anterior, Inferolateral, Anteroposterior, In addition to the inferior wall, Other lateral wall, along with True posterior wall, as well as the ICD-9cm classification and length of stay in hospital of Acute Myocardial Infarction, which includes anterolateral, Anterior, Inferolateral, Anteroposterior, In addition to inferior wall.

To further of outcomes, this paper was assessed the postoperative complications of health outcomes. Acute myocardial infarction patients were determined with Gestational hypertension, Postpartum haemorrhage, Postpartum infection, Preeclampsia, Preterm labor, and Transfusion, where these health outcomes can be seen in Table 8.

RESULTS

Table 1: Characteristics of acute myocardial infarction patients based on ages

N	Va	48
	Mi	0
M		37.5000
StE		.67240
Me		37.5000
Mo		30.00 ^a
SD		4.65855
Var		21.702
Sk		.000
SES		.343
Ra		15.00
Min		30.00
Max		45.00
S		1800.00

Table 2: Characteristics of acute myocardial infarction patients based on BMI

	F	Per (%)	VP (%)	CP (%)
V	<28.6	16	33.3	33.3
	>28.6	32	66.7	100.0
T	48	100.0	100.0	

Table 3: Distributions of causes of acute myocardial infarction patients

	F	Per (%)	VP (%)	CP (%)
V	Atherosclerosis	15	31.3	31.3
	SCAD	22	45.8	77.1
	Spasm	4	8.3	85.4
	Thrombosis	7	14.6	100.0
	T	48	100.0	100.0

Table 4: Distributions of symptoms in acute myocardial infarction patients

		F	Per (%)	VP (%)	CP (%)
V	chest pain	14	29.2	29.2	29.2
	diaphoresis	5	10.4	10.4	39.6
	dizziness	4	8.3	8.3	47.9
	nausea	3	6.3	6.3	54.2
	shortness of breath	10	20.8	20.8	75.0
	tachyarrhythmias	12	25.0	25.0	100.0
T		48	100.0	100.0	

Table 5: Distributions of smoking used of health outcomes acute myocardial infarction patients

		F	Per (%)	VP (%)	CP (%)
V	Non-smoker	37	77.1	77.1	77.1
	Smoker	11	22.9	22.9	100.0
T		48	100.0	100.0	

Table 6: Distributions of alcohol used of health outcomes acute myocardial infarction patients

		F	Per (%)	VP (%)	CP (%)
V	alcohol used	6	12.5	12.5	12.5
	Non-alcohol used	42	87.5	87.5	100.0
T		48	100.0	100.0	

Table 7: Distributions of comorbidities of health outcomes in acute myocardial infarction patients

		F	Per (%)	VP (%)	CP (%)
V	Anemia	3	6.3	6.3	6.3
	Diabetes mellitus	6	12.5	12.5	18.8
	Hypertension	20	41.7	41.7	60.4
	Migraine headaches	4	8.3	8.3	68.8
	Obesity	11	22.9	22.9	91.7
	Thrombophilia	4	8.3	8.3	100.0
	T	48	100.0	100.0	

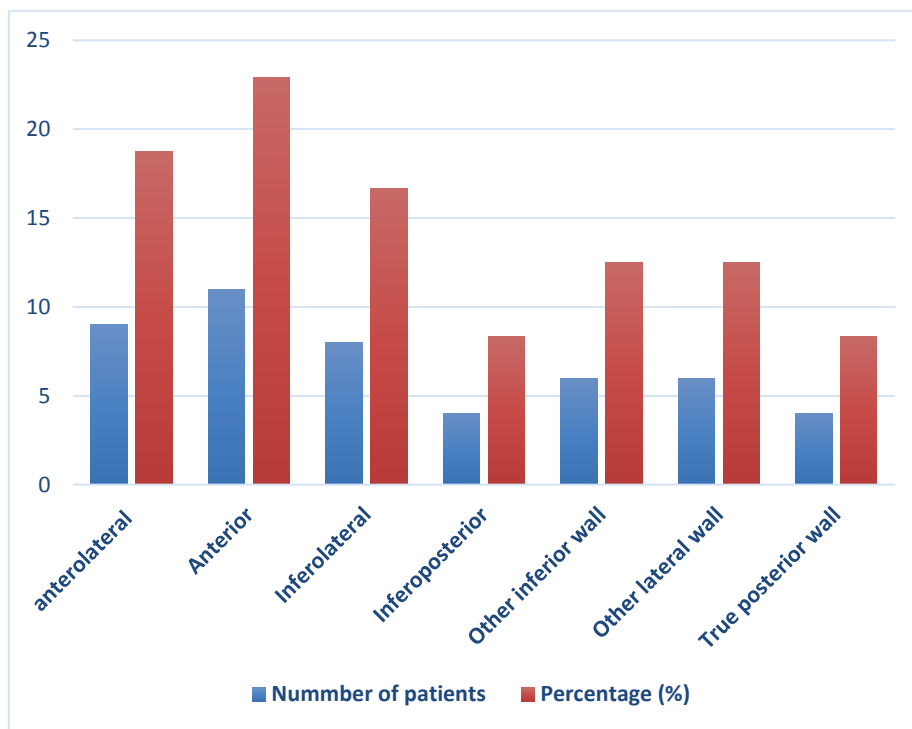


Figure 1: Determination of Location of Acute Myocardial Infarction.

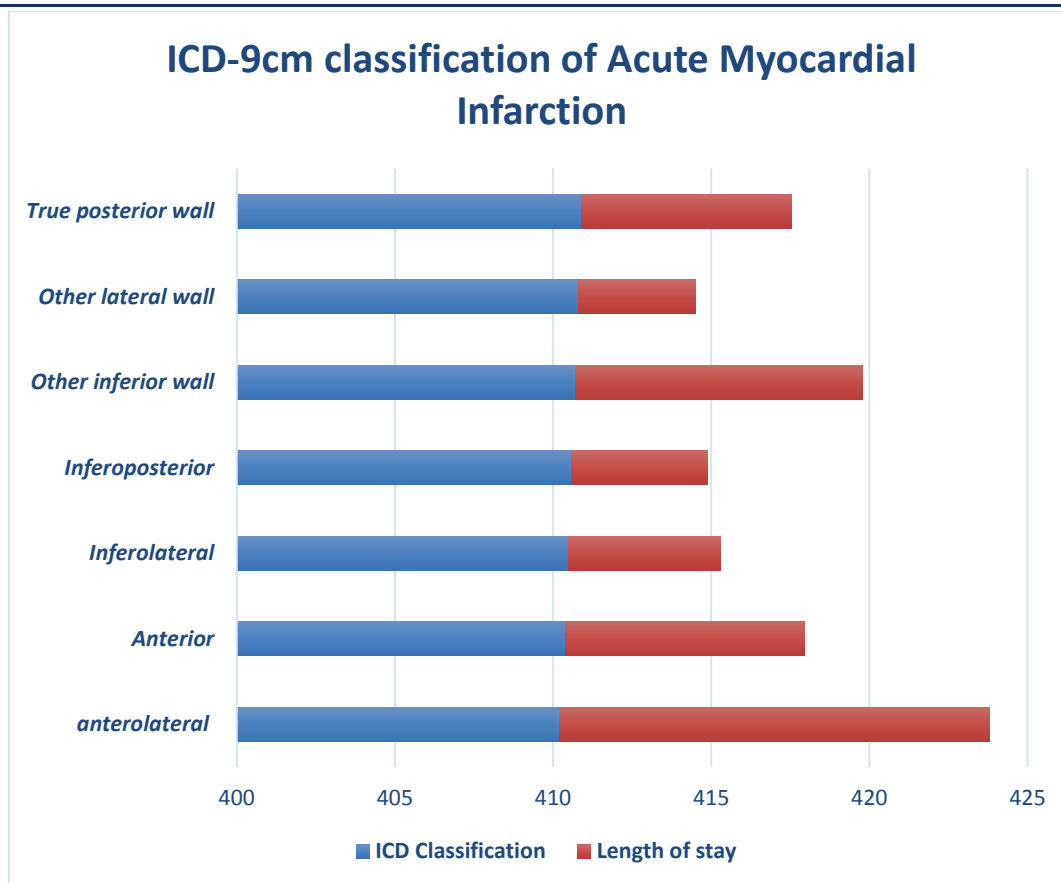


Figure 2: Determination of ICD-9cm classification of Acute Myocardial Infarction

Table 8: Post-operative complications of health outcomes in acute myocardial infarction patients

	F	Per (%)	VP (%)	CP (%)
V				
Gestational hypertension	4	8.3	8.3	8.3
Non	29	60.4	60.4	68.8
Postpartum hemorrhage	6	12.5	12.5	81.3
Postpartum infection	2	4.2	4.2	85.4
Preeclampsia	2	4.2	4.2	89.6
Preterm labor	3	6.3	6.3	95.8
Transfusion	2	4.2	4.2	100.0
T	48	100.0	100.0	

Risk factors	OR (95% CI) *	P-value
Age		
25-30	4.5 (1.32-9.43)	0.06
30-45	8.54 (2.41-14.66)	0.00462
Diabetes	4.77 (2.82-8.66)	0.0032
Hypertension	16.73 (7.33-55.26)	0.00022
Postpartum haemorrhage	2.6 (1.9-5.44)	0.45
Obesity	5.43 (3.24-7.88)	0.33
chest pain	3.65 (1.36-8.77)	0.0277

DISCUSSION

Patients who died in the hospital from a sudden myocardial infarction could not be counted, leading in an underestimating of the incidence as well as mortality. We have no idea how prevalent an acute myocardial infarction occurs in non-

pregnant women. Freaks and others were published a study on the incidence of myocardial infarction (MI) within reproductive-aged women in a large health maintenance organization. [Irgens, H.U. et al., 2001]

Obesity and age above 30 have been identified as substantial risk factors for pregnancy-related myocardial infarction. Because the risk of myocardial infarction increases with age and is higher in overweight women. High blood pressure, postoperative infection, obesity, diabetes, and an increased risk of thrombosis all have been known to get known pregnant women. [Jónsdóttir, L.S. et al., 1995]

Although thrombophilia was previously established as a risk factor underpinning myocardial infarction in young women, it is still not recognized as a risk factor for acute myocardial infarction during pregnancy. It is not surprising that thrombophilia might be a risk factor, given that pregnancy hypercoagulability, particularly is increased in thrombophilia, is considered a risk factor for a heart attack during pregnancy. However, it is possible that the diagnosis of thrombophilia was more common in women suffering from a sudden myocardial infarction merely due to these women seemed more likely to be investigated. Migraine headaches, that are not often thought to be a risk factor for myocardial infarction, were discovered to be a risk factor in the present study. [Agatisa, P.K. et al., 2004]

CONCLUSION

In conclusion, acute myocardial infarction in pregnancy is represented as infrequent throughout the puerperium of pregnancy, who have increases with the risk. The risk can be raised greatly with age. Also, it is shown to be much higher in obese women pregnant, women who have medical problems, and women suffering from obstetric difficulties. The first step toward prevention is identifying women at risk and understanding the ethology for pregnancy-related acute coronary artery disease. Diabetes and hypertension impacted women after surgery, according to our data: postpartum haemorrhage and infection-induced changes in heart rate during post-operative recovery. Mothers with advanced maternal age documented cardiac risk factors such as thrombophilia, particularly postpartum problems, and smokers should be prioritized for screening and preventive treatments.

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