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ORIGINAL ARTICLE

Risk Factors for Deep Vein Thrombosis in Pregnancy and Puerperium at a Tertiary Care Hospital in Muzaffarabad, AJK

MUDASAR HAFIZ[1], MUANZZA NAZIR[2], SYEDA ABIDA HUSSAIN[3], RUBINA RAFIQUE[4], NOSHEENA SHABIR[5], YASMIN AKHTAR[6]
[1]*Post graduate trainee Medicine SKBZH/CMH Muzaffarabad AJK*
[2]*Associate Professor medicine AJKMC,SKBH/CMH Muzaffarabad AJK*
[3]*Lecturer physiotherapy faculty of health and medical sciences, AJK University, Muzaffarabad.*
[4]*Assistant professor Medicine, AJKMC, AIMS Muzaffarabad AJK*
[5]*Assistant Professor gynecology and obstetrics, AJKMC, SKBZH/CMH Muzaffarabad AJK.*
[6]*Senior Consultant .Ayub Teaching Complex, Abbotabad.*
Correspondence to Dr. Mudasar Hafiz, Post graduate trainee Medicine SKBZH/CMH Muzaffarabad AJK

ABSTRACT

Aim: Risk factors of deep vein thrombosis in pregnancy and puerperium in our setting.
Study Design: Descriptive Cross-sectional study
Place and duration of study: Departments of Obs & Gynae and General Medicine, CMH Muzaffarabad, AJK from 20th December, 2019 to 20th June, 2020.
Methodology: A total of 385 females were included. Demographic data including age, parity, gravidity, BMI, obesity and timing of DVT occurrence was noted. The associated risk factors including mode of delivery in postpartum women, smoking status, past history of DVT, gestational diabetes and Diabetes Mellitus were noted.
Results: Mean age of the participants was 26.1±5.3 years. Frequency of women developing deep vein thrombosis during pregnancy was 84.9% and 15.1% women developed DVT during puerperium. Past history of DVT was present in 26.5%. 31.7% of women were known diabetics and 29.1% developed gestational diabetes during current pregnancy. Frequency of smoking was 4.2%. 8% women presented with DVT in first trimester, 139(36.1%) in second trimester and 154 (40%) in third trimester.
Conclusion: DVT is more common in the third trimester of pregnancy than in puerperium. Obesity, Diabetes Mellitus and past history of DVT were significant risk factors identified in the study.
Keywords: Pregnancy, Postpartum Period, Deep Vein Thrombosis

INTRODUCTION

Formation of blood clots in the deep veins of legs, thighs, or pelvis is called DVT. Pregnant females have 5-10 times more risk of developing DVT as compared to non-pregnant females[1]. Hypercoagulable state of pregnancy leads to the development of thrombosis[2].

In the USA, venous thromboembolism (VTE) is identified in 1/500-2000 pregnancies with absolute incidence of 0.025 to 0.1%[3]. The occurrence of VTE has increased in Asia over the past few years but it is still low compared to that in the Western countries[4].

A woman has highest risk of developing postpartum VTE in the first few weeks after delivery and this risk falls by 12th week post-partum[6]. Pregnancy associated DVT is related with a high chance of embolic events[5].

The objective of the study was to see risk factors of deep vein thrombosis in pregnancy and puerperium in our setting.

METHODOLOGY

It is a descriptive cross-sectional study conducted at the in-patient departments of Obs & Gynae and General Medicine, CMH Muzaffarabad, AJK from 20th December 2019 to 20th June 2020 after permission from IRB. The sample size is 385. Sampling technique used was consecutive non-random sampling. Women of age 25 – 50 years**,** Pregnancy**,** sign and symptoms of deep venous thrombosis confirmed on Doppler ultrasound were included in the study while patient with unclear ultrasonography report were excluded. The study was conducted after approval from institutional ethical review committee. A total of 385 pregnant or postpartum women admitted with diagnosis of DVT in the Department of General Medicine and Obstetrics & Gynecology, CMH were enrolled in the study after informed written consent. Demographic data including age, parity, gravidity; BMI, obesity and timing of DVT occurrence (1st, 2nd, 3rd trimester or post-partum) were noted. The data was entered and analyzed using SPSS version 21

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RESULTS

Fig 1: Time of diagnosis in women with DVT

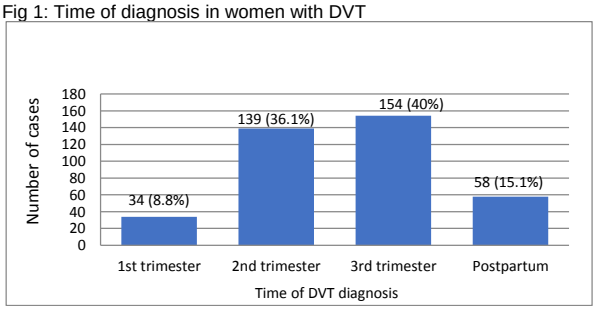

Table 1: Women with deep vein thrombosis

Age	199 (51.7%)
	186 (48.3%)
Gestational age	22.8 ± 6.8
Parity	2 (0 – 7)
Parity	261 (67.8%)
	24 (32.2%)
Gravidity	3 (1 – 9)
BMI	27.4 ± 3.4
Obesity	106 (27.5%)
Past H/O DVT	102 (26.5%)
Diabetes Mellitus	122 (31.7%)
Gestational Diabetes	112 (29.1%)
Smoker	16 (4.2%)

Table 2: Risk factors in respect of age of the patients

		16 – 25 yrs	**26 – 41 yrs**	**p-value**
Gestational Diabetes	Yes	64 (32.2%)	48 (25.8%)	0.17
	No	135 (67.8%)	138 (74.2%)	
Diabetes Mellitus	Yes	55 (27.6%)	67 (36%)	0.08
	No	144 (72.4%)	119 (64%)	
Obesity	Yes	53 (26.6%)	53 (28.5%)	0.73
	No	146 (73.4%)	133 (71.5%)	
Smoker	Yes	7 (3.5%)	9 (4.8%)	0.52
	No	192 (96.5%)	177 (95.2%)	
Previous H/O DVT	Yes	53 (26.6%)	49 (26.3%)	0.95
	No	146 (73.4%)	137 (73.7%)	

Table 3: Risk factors with regards to Parity

		Up to 2	≥ 3	p-value
Gestational Diabetes	Yes	81 (31%)	31 (25%)	0.22
	No	180 (69%)	93 (75%)	
Diabetes Mellitus	Yes	76 (29.1%)	46 (37.1%)	0.12
	No	185 (70.9%)	78 (62.9%)	
Obesity	Yes	78 (29.9%)	28 (22.6%)	0.14
	No	183(70.1%)	96(77.4%)	
Smoker	Yes	7 (2.7%)	9 (7.3%)	0.04
	No	254(97.3%)	115(92.7%)	
Previous H/o DVT	Yes	73 (28%)	29(23.4%)	0.39
	No	188 (72%)	95(76.6%)	

DISCUSSION

In our study, 385 women were included. Mean age of the participants was 26.1±5.3 years. More than half 199(51.7%) women were 16-25 years old. Frequency of women developing DVT during pregnancy was 327(84.9%), 154(40%) presented with DVT in third trimester and 58(15.1%) women developed DVT during puerperium. Kawaguchi R et al noted that DVT occurred at an earlier stage of pregnancy, while the period of the highest risk of pulmonary thromboembolism was in the puerperium. Of the 20 cases with DVTs, 65% of ante partum DVT started in the first trimester. All cases of pulmonary thromboembolism were observed within 26 days of delivery. The age range at the time of diagnosis of DVT was 21-43years[7]. James et al reported that DVT occurred more in the early pregnancy compared to that in the puerperium time[8]. In our study, median parity of the women was 2 and majority 261(67.8%) were having parity ≤2. In contrast, Gader AA et al observed in their study that primigravida females were at higher risk of developing DVT (p=0.01)[9].

In present study, Mean BMI was 27.4±3.4 and 106(27.5% (106) were obese. Past history of DVT was present in 26.5% of the women. 31.7% of women were known diabetics and 29.1% developed gestational diabetes during current pregnancy. Frequency of smoking was 4.2%. Larsen TB et al found that smoking and obesity were linked with high risk of VTE during pregnancy and the puerperium[10]. In a study by Benson MD et al, a past personal or family history of thrombosis was noted as an important risk factor for recurrent DVT episodes in pregnancy or puerperium[11].

CONCLUSION

DVT is more common in pregnancy period than in puerperium. Obesity, diabetes mellitus and past history of DVT were common risk factors identified in the study.

Conflict of interest: Nil

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