

Risk Assessment and Thromboprophylaxis for Venous Thromboembolism in the Puerperium in a Health Facility in Nigeria

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Background: Venous thromboembolism (VTE) is a leading cause of maternal morbidity and mortality. Overall incidence in pregnancy and puerperium is 1- 2 per 1000 pregnancies and it peaks in the first 3 weeks postpartum. Careful assessment of risk factors for VTE and employing optimum thromboprophylaxis can prevent VTE. Unfortunately in Nigerian tertiary institutions, there is paucity of information about its risk factors, screening for it, and its prophylaxis. In the developed countries, the relative risk of VTE in pregnancy was found to be increased by four- to six-folds, and this was increased further in the postpartum period. Despite the fact that VTE is a leading cause of maternal morbidity and mortality, there is still paucity of information in our environment. There is also a clear evidence that identification of risk factors with subsequent thromboprophylaxis of the at-risk population will reduce the occurrence of morbidity and mortality caused by VTE

Objective: To evaluate the practice of risk assessment, thromboprophylaxis and to determine those who would have needed thromboprophylaxis

Methods: A retrospective cross-sectional study carried out at the University of Port Harcourt Teaching Hospital (UPTH).The data extracted from 212 hospital notes of inpatient postpartum women from January 2019 to January 2020 were as follows: Demographic characteristics, risk factors for VTE, thromboprophylaxis, diagnosis and treatment of VTE.VTE risk was assessed using the RCOG guideline of 2015. Women with a VTE event in the preceding 4 months before pregnancy were excluded Data was analysed using a Statistical Package for Social Science (SPSS) software, version 18.

Results

Table 1: Venous Thromboembolism and its presentations (n=212)

VTE and its Presentations	Number of patients [Frequency N(%)]	
	Yes	No
Pain in the calf	17 (8.02)	195 (91.98)
Redness of the legs	13 (6.13)	199 (93.87)
Tachycardia	11(5.19)	201(94.81)
Tachypnoea	9 (4.25)	203 (95.75)
Chest pain	13(6.13)	199(93.87)
Pulmonary Embolism	0 (0)	0 (0)
Deep venous thrombosis	0 (0)	0 (0)
Sudden Death	2 (0.94)	210 (99.06)

Table 2A: Frequency of individual risk factors for VTE n = 212

Categories of risk	Risk factors	Frequency N(%)	
		Yes	No
High risk – LMWH at least 6 weeks post-partum	Any previous VTE	0 (0)	0 (0)
	Anyone requiring antenatal LMWH	0 (0)	0 (0)
	High-risk thrombophilia	0 (0)	0 (0)
	Low-risk thrombophilia and family history.	0 (0)	0 (0)
Intermediate risk: LMWH for 10 days postpartum; longer if risk factor persists or there are more than 3 risk factors.	Caesarean section in labour	33 (15.57)	179 (84.43)
	Obesity (BMI ≥ 30 Kg/m2 but < 40 Kg/m2)	52 (24.53)	160 (75.47)
	Obesity (BMI ≥ 40 kg/m2)	6 (5.50)	206 (97.17)
	Readmission or prolonged admission (≥ 3 days) in the puerperium	204 (96.23)	8 (3.77)
	Any surgical procedure in the puerperium except immediate repair of the perineum	0 (0)	212 (100)
	SCD	3 (1.42)	209 (98.58)
	GDM	4 (1.89)	208 (98.11)
	RVD	4 (1.89)	208 (98.11)

Table 2B: Frequency of individual risk factors for VTE n = 212

Categories of risk	Risk factors	Frequency N(%)	
		Yes	No
Two or more risk factors – Intermediate risk; < 2 risk factors – Low risk	Age > 35 years	68 (32.08)	121 (57.08)
	Obesity	58 (27.36)	51 (24.06)
	Parity ≥ 3	102 (48.11)	110 (51.89)
	Smoker	3 (1.42)	209 (98.58)
	Gross varicose veins	8 (3.77)	204 (96.23)
	Elective caesarean section	51 (24.06)	161 (75.94)
	Emergency antenatal C/S	25 (11.79)	187 (88.21)
	Current pre-eclampsia	38 (17.92)	174 (82.08)
	Family history of VTE	0 (0)	0 (0)
	Low-risk thrombophilia	0 (0)	0 (0)
	Current systemic infection (Puerperal sepsis)	6 (2.83)	206 (97.17)
	Multiple pregnancy	4 (1.89)	208 (98.11)
	Immobility, e.g. paraplegia, PGP, long- distance travel	0 (0)	212 (100)
	Preterm delivery in this pregnancy (< 37+0 weeks	52 (24.53)	160 (75.47)
	Stillbirth in this pregnancy	19 (8.96)	193 (91.04)
	Mid-cavity rotational or operative delivery	1 (0.47)	211 (99.53)
	Prolonged labour (> 24 hours)	26 (12.26)	186 (87.74)
	PPH > 1 litre or blood transfusion	36 (16.9)	176 (83.02)

Table 3: Scoring of the risk factors for VTE and the need for thromboprophylaxis n = 212

Risk Scores	Frequency	Total N (%)	Need for Thromboprophylaxis	Total
0 (No risk)	0 (0)	0 (0)	Mobilisation and avoid dehydration.	Not needing LMWH
1 (Low risk)	2 (0.94)	2 (0.94)		
2 (mild risk)	2 (0.94)	2 (0.94)	To consider thromboprophylaxis for at least 10 days	210 (99.06)
3 (Intermediate risk)	17 (8.02)	17 (8.02)	To give LMWH for 10 days postpartum but extend beyond 10 days if risk persist.	
4 (High risk)	30 (14.15)	191 (90.09)	To give LMWH for 6 weeks postnatal.	
5 (High risk)	52 (24.53)			
6 (High risk)	51 (24.06)			
7 (High risk)	34 (16.04)			
8 (High risk)	15 (7.08)			
9 (High risk)	4 (1.89)			
10 (High risk)	3 (1.42)			
Total	212 (100)	212 (100)		

Discussion: This study has highlighted that in our tertiary health institution, the practice of risk assessment in patients is not done despite the fact that VTE is the leading cause of maternal morbidity and mortality in our setting.

Majority of these patients had risk factors for VTE and did not receive Thromboprophylaxis to prevent the attendant sequelae in the puerperium.

There was no patient among the 212 study population that had retrospective VTE assessment who did not have at least 1 risk factor for VTE.

Out of the 212 Patients, 2(0.94%) scored "1" each for risk of developing VTE and therefore would not have needed LMWH in the puerperium according to the NICE guideline.

The advice for them would have been to mobilise and avoid dehydration. Irrespective of the presence or absence of other risk factors, 204(96.23%) of the patients had either prolonged admission to hospital for more than 3 days or were readmitted after initial discharge from the hospital. They scored "3" each for VTE risk and therefore belong to the intermediate risk category. They would have needed LMWH for 10 days postpartum and would have continued on it beyond 10 days if risk persisted.

Conclusion: The study showed that irrespective of the morbidity and mortality that VTE could cause, assessment for its risk and prophylaxis was not a routine practice at the tertiary centre as at the time of the study. The prevalence of risk factor was high in the study population as 99.06% of the study population were at significant risk of developing VTE. No case of VTE was recorded in the study population, although there was a case of unexplained sudden death

Key words: Risk assessment, Thromboprophylaxis, Puerperium

Disclosure: None