ASSOCIATION OF FACTOR V LEIDEN G1691A AND PROTHROMBIN GENE G20210A MUTATION WITH ADVERSE PREGNANCY OUTCOMES

Sidra Asad Ali, Bushra Moiz, Amna Nasir, Lumaan Shaikh*

Section of Haematology, Department of Pathology and Laboratory Medicine, Aga Khan University Hospital, Department of Obstetrics and Gyanecology

Background

Familial defects and polymorphisms of clotting cascade proteins protein S, protein C, factor V Leiden G1691A and factor II G20210A are linked with increased risk of thromboembolism better known as *inherited thrombophilia*.

It is strongly associated with poor pregnancy outcomes and anticoagulation therapy can potentially improve obstetric outcome in females with thrombophilias.

To date, there is local limited data on the role of these genetic abnormalities causing adverse pregnancy outcomes

Objective

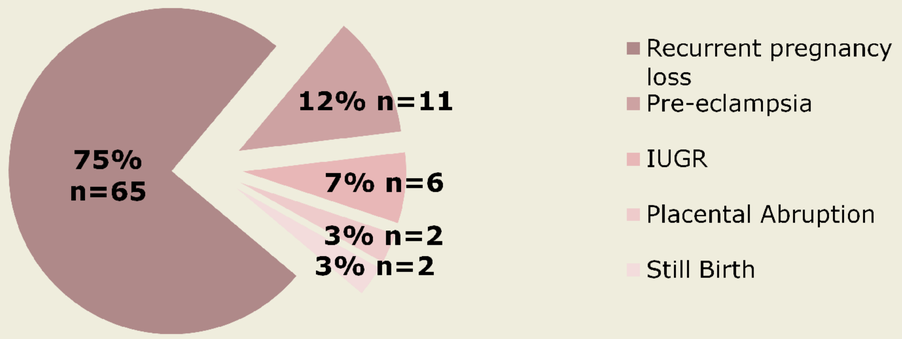
Determine the association of factor V Leiden G1691A and prothrombin gene G20210A mutation with adverse pregnancy outcomes.

Materials & Methods

It is a case control study. PCR-RFLP technique was used. Females with adverse pregnancy outcomes coming to obstetrical clinic are included in the study as cases. Control samples are selected from females with ≥ 2 consecutive normal pregnancies. Calculated sample size is 172 which comprise of 86 cases and 86 controls.

Results

Distribution of adverse pregnancy loss



Parameters	Cases	Control
Maternal Age (years)	29.3 (5.17)	27.6 yrs (4.51)
Previous Live Births n (%)	40 (46.5%)	50/50 (100%)

Mutation		Cases n=86			Controls n=86
		Recurrent pregnancy loss n (%)	OR	p-value	Other Adverse Outcomes n (%)	n (%)
FVL heterozygous	Normal (-/-)	48 (96%)	0.49	0.155	86 (100%)	86 (100%)
	Heterozygous (+/-)	**2 (04%)**			-	-
	Homozygous (+/+)	-			-	-
FII heterozygous	Normal (-/-)	49 (98%)	0.49	0.316	86 (100%)	86 (100%)
	Heterozygous (+/-)	**1 (02%)**			-	-
	Homozygous (+/+)	-			-	-

Participants

Adverse pregnancy outcomes included
- Recurrent pregnancy loss (≥ 2 1st trimester or one or more second trimester miscarriage)
- Pre-eclampsia
- Placental Abruption
- IUGR
- Still birth

Conclusion

Overall, this study does not support a significant association between inherited thrombophilia mutations and adverse pregnancy outcomes.

The apparent lack of association may be reconciled by the low numbers of subjects recruited.

Strengths and Limitations

First local study to determine the association of thrombophilic mutations with adverse pregnancy outcomes. The sample size was limited and other thrombophilic mutations were not assessed.

Future Directions

A large prospective follow-up study of FVL and prothrombin G20210A carriers leading to adverse outcome will further strengthen the association. This shall also aid in patient management, through instituting appropriate anticoagulant therapy.

References

Lykke JA, Bare LA, Olsen J, Lagier R, Arellano AR, Tong C, et al. Thrombophilias and adverse pregnancy outcomes: Results from the Danish National Birth Cohort. J Thromb Haemost. 2012 Jul;10(7):1320-5

Barbour LA. Thromboembolism in pregnancy.ACOG Practice Bull. 2000; 19.