Assessment of Coagulation profile in Sickle Cell Disorders in Jazan Region.

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Abstract (300 word limit)

Statement of the Problem: Sickle cell disease (SCD) is one of the most widely common genetically disorders, which is representative with a wide clinical severity. (Weatherall, 2005) In Saudi Arabia, SCA is reported with a high prevalence rate in Jazan provinces. (Moody et al., 2019) SCD is commonly considered a hypercoagulation state, as the patients of SCD mostly have altered hemostatic components, which may lead to an increased risk of thrombosis complications. (Ogunsile, Naik and Lanzkron, 2019) previous studies have been considered to demonstrate that the excessive activity of blood clotting factors in patients with sickle cell anemia may play an important role in disease progression. (Pakbaz and Wun., 2014) (Brunson et al., 2017)

The purpose of this study is to evaluate the Coagulation profile patterns and hematological characteristics in SCD patients from the Jazan region of Saudi. **Methodology:** One hundred fifty participants were recruited for this research, consisting of 50 Sickle cell anemia patients, 50 sickle cell trait subjects with HbAS and 50 healthy subjects with hemoglobin AA were recruited for the current cross-sectional study. Following informed consent, 5 mL of two venous blood samples were collected to investigate their routine coagulation profile involving PT, PTT and hematological test. **Findings:** The coagulation profile results show that PT and PT levels were significantly different (p less than 0.05) in SCA patients with HbSS compared to the healthy control group. However, there were non-significant differences (p greater than 0.05) in the levels of PTT and PT between Sickle cell trait HbAS and the healthy controls. **Conclusion:** The study findings concluded that patients with SCD tend to have abnormal coagulation activation as they should receive health education regarding their general health status for further evaluation and treatment.

Image1: **Result of coagulation tests of control group and case group (HbSS and HbAS)**

Table (2): Result of coagulation tests of control group and case group

Parameter: mean ± SD	HbSS	HbAS	HbAA	P value		
				HbSS & Hb AA	HbSS & HbAS	HbAS & HbAA
PT (seconds)	13.33 ± 1.81	12.08± 1.51	12.84 ± 1.05	0.023	0.003	0.340
PTT (seconds)	32.6 ± 5.57	31.2 ± 4.37	30.8± 5.45	0.007	0.057	0.488

Recent Publications (minimum 5)

1. Weatherall, D., Hofman, K., Rodgers, G., Ruffin, J. & Hrynkow, S. 2005. A case for developing North-South partnerships for research in sickle cell disease. Blood, 105, 921-3.
2. Moody KL, Mercer K, Glass M. An Integrative Review of the Prevalence of Depression among Pediatric Patients with Sickle Cell Disease. Soc Work Public Health. 2019;34(4):343-352. Heilig M, Egli M (2006) Pharmacological treatment of alcohol dependence: Target symptoms and target mechanisms. Pharmacology and therapeutics 111:855-876.
3. Ogunsile FJ, Naik R, Lanzkron S. Overcoming challenges of venous thromboembolism in sickle cell disease treatment. Expert Rev Hematol. 2019 Mar;12(3):173-182.
4. Pakbaz Z, Wun T. Role of the hemostatic system on sickle cell disease pathophysiology and potential therapeutics. Hematology/Oncology Clinics. 2014 Apr 1;28(2):355-74.
5. Brunson, A.; Lei, A.; Rosenberg, A.; White, R.H.; Keegan, T.; Wun, T. Increased incidence of VTE in sickle cell disease patients: Risk factors, recurrence, and impact on mortality. Br. J. Haematol. 2017, 178, 319–326

Photograph



Biography (150 word limit)

Dr has her expertise in evaluation and passion in improving the health and wellbeing. Her open and contextual evaluation model based on responsive constructivists creates new pathways for improving healthcare. She has built this model after years of experience in research, evaluation, teaching and administration both in hospital and education institutions. The foundation is based on fourth generation evaluation (Guba& Lincoln, 1989) which is a methodology that utilizes the previous generations of evaluation: measurement, description and judgment. It allows for value-pluralism. This approach is responsive to all stakeholders and has a different way of focusing.

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Notes/Comments