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Depression in Sickle-Cell Disease patients in the Eastern Province

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Abstract: **Introduction: Chronic medical illnesses and chronic pain are overlapped with depressive symptoms and associated most of the times with under diagnosed depression. In KSA, eastern province SCD is among the commonest diseases causing chronic pain that require frequent use of potent analgesics like morphine. Hospitalized SCD patients were showing varies behavioral changes, depressive symptoms and death wishes. The aim of the study: to estimate the prevalence of depression in adult SCD patients. Method: cross sectional study was conducted among 308 SCD patients above 18 years including both genders using a questionnaire -Beck Depression Inventory(BDI) distributed via social media in eastern province-KSA. Results: 38.9% of the sample were not having depression,(23.2%) with mild depression,(9%) with borderline clinical depression, (20.6%) with Moderate depression,(6.8%) with Severe depression , and (1.6%) with Extreme depression. The prevalence of depression was higher among patients with low income, patients with more than 5 hospitalization/year, And patients with severe painful crisis. Conclusion: most of the sickle cell disease patients showed mild to moderate depressive symptoms however, The prevalence is higher in patients with frequent admissions and frequent painful crisis which may suggest their need for a psychiatric follow up.**

Keywords: **Sickle-Cell Disease, Depression, Eastern Province, KSA.**

I. INTRODUCTION

Chronic medical illnesses and chronic pain are overlapped with depressive symptoms and associated most of the times with under diagnosed depression .In KSA, eastern provenance SCD among the commonest diseases that cause chronic pain that require regular use of potent analgesics like morphine associated with varies behavioral changes, depressive symptoms and death wishes observed by us during clinical rounds.

Significant numbers of patients with sickle cell disease have depression.[1,2,3]. This may be a result of the constant demands of the illness or intrusive treatments. The combination of depression and chronic medical illnesses, such as sickle cell disease, decreases the quality of life and results in increased morbidity and mortality.[4,5]

The prevalence of SCD in Saudi Arabia varies significantly in different parts of the country, with the highest prevalence is in the Eastern province, followed by the southwestern provinces. The reported prevalence for sickle-cell trait ranges from 2% to 27%, and up to 2.6% will have SCD in some areas.[6]

Sickle cell haemoglobin (HbS) results from a single-base mutation of adenine to thymine, which produces a substitution of valine for glutamic acid at the sixth codon of theβ-globin chain (α2β26glu→val). As the synthesis of HbF is normal, the disease usually does not manifest itself until the HbF decreases to adult levels at about 6 months of age.

The sickle gene is commonest in Africans (up to 25% gene frequency in some populations) but is also found in India, the Middle East and Southern Europe.Depending on the type of haemoglobin chain combinations,three clinical syndromes occur :

- Homozygous HbSS have the most severe disease
- Combined heterozygosity (HbSC) who suffer intermediate symptoms
- Heterozygous HbAS (sickle cell trait) have no symptoms

Sickling can produce a shortened red cell survival and impaired passage of cells through the microcirculation,leading to obstruction of small vessels and tissue infarction,known as Vaso-occlusive crises. a patient with moderately severe sickle cell anaemia may have around three hospital admissions a year from painful vaso-occlusive crises.Also can be complicated with Pulmonary hypertension,Acute chest syndrome,Chronic haemolysis, Splenic sequestration, Bone marrow aplasia,Infections, Leg ulcers, Cardiac problems Neurological complications, Cholelithiasis,Chronic hepato-megaly, Chronic tubulointerstitial nephritis ,Priapism,retinopathy, spontaneous abortion, intrauterine growth retardation, preeclampsia and fetal death[7].

Psychological complications in patients with SCD mainly result from the impact of pain and symptoms on their daily lives and society's attitudes towards them. Early research in psychological aspects of SCD examined the extent of its impact on both children and adults, and the functioning of affected families.[9] These studies showed that the most frequent psychological problems encountered include increased anxiety, depression, social withdrawal, aggression, poor relationships and poor school performance[10,11,12,13]. A few case reports also indicated high levels of parental anxiety, overprotection, excessive feelings of responsibility and guilt. [14, 15]

II. METHODS

A cross sectional study was conducted among 308 SCD patients above 18 years including both genders using a questionnaire -Beck Depression Inventory (BDI) distributed via social media in eastern province-KSA from 1st Dec 2015 to 31Jan 2016. The data collected included demographic (age, gender, marital status, level of education, employment, household income), types of hemoglobinopathy , disease severity (ER visits per year, admissions per year , blood transfusions per year , hydroxyurea use), pain , compliance with treatment ,smoking , alcohol intake , and family history of psychiatric illness.

The Beck Depression Inventory (BDI) scale was used to measure depression. The BDI is a 21-item test that measures the presence and degree of depression in adults. It has commonly been used for measuring depression in patients with a variety of selective chronic illnesses.

III. RESULTS

The study sample consisted of (207) men and (117) women. The age of the subjects ranged From (18) to (71) years with a mean age of (28.88) years. (162) of the subjects were married, and (138) were single. (250) of the sample had a high school education or higher. (69) of the patients were employed. (83) Reported a household income of less than 2000 SR . (261) had SS phenotype, and (43)had S-β-thalassemia.A thirty-eight point nine (38.9%) of the sample were not having depression,(23.2%) with mild depression,(9%) with borderline clinical depression, (20.6%) with Moderate depression, (6.8%) with Severe depression , and (1.6%) with Extreme depression.

Overall, variables such as hospitalizations (>5 in year, p= (0.001)), severe pain full crisis p= (0.001), and family income (<2000SR, p= (0.019)) significantly predicted the likelihood of depressive symptoms. Gender, Marital status, level of education, employment status, smoking, alcohol use, family psychiatry history, compliance, number of blood transfusions, phenotype, ER visits and hydroxyurea use were not significant predictors (p>0.05) of depression in these patients.

The prevalence of depression was higher among patients with low income, patients with more than 5 hospitalization/year, And patients with severe painful crisis.

IV. DISCUSSION

The aim of this study is to prove that the incidence is higher in SCD for depression than the general population, And the results concur with previous studies. The prevalence of depression is higher in sickle cell patients than healthy peers.

The 2nd goal is to Find the risk factors leading to depression among SCD. The prevalence of depression was higher among patients with low income, patients with more than 5 hospitalization/year, And patients with severe painful crisis. So, low income, hospitalization and severe pain full crisis are the leading risk factors of depression among SCD in Eastern province in KSA.

V. CONCLUSION

Most of the sickle cell disease patients showed mild to moderate depressive symptoms however, The prevalence is higher in patients with frequent admissions and frequent painful crisis which may suggest their need for a psychiatric follow up.

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