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114.SICKLE CELL DISEASE, SICKLE CELL TRAIT AND OTHER HEMOGLOBINOPATHIES, EXCLUDING THALASSEMIAS: CLINICAL AND EPIDEMIOLOGICAL

Sickle Cell Disease and Comorbid Psychiatric Conditions: A Single-Center Retrospective Study

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Introduction: It is established that patients with various chronic disease states are predisposed to psychiatric comorbidities. However, in the sickle cell disease (SCD) patient population, psychiatric comorbidities have been uniquely shown to exacerbate disease through a psychosomatic component. A co-existing diagnosis of depression is found in 1 of 3 patients with SCD, and they are more than 5 times as likely to suffer from a mood disorder than the general population. SCD patients with psychiatric illnesses have significantly worse physical and mental health outcomes. Additionally, healthcare costs are more than double for SCD patients with depression than for those without. Thus, SCD patients with psychiatric comorbidities have unique challenges and are an important population to study.
Methods: This was a retrospective single-center study of patients with SCD, all genotyped and ≥16 years old, who were treated at UT Physicians Comprehensive Sickle Cell Center during the study period (March-July 2023). The demographics, clinical characteristics, psychiatry history, initial and recent PHQ-9 results, and laboratory findings were collected and analyzed. Descriptive statistics were obtained and analyzed between SCD patients with and without psychiatric disorders and are presented in percentages, medians, and interquartile ranges. Data analysis was completed using a p value < 0.05 to indicate statistical significance, using an independent group unpaired *t*-test for continuous variables and Chi-square and Fisher's exact tests for categorical data, respectively. Data was analyzed using GraphPad Prism version 9.0.2.
Results: Patient sex was 45% male and 55% female; 73% of patients had the *HbSS* genotype. Of the studied cohort, 33% were affected by at least one psychiatric disorder. The most common psychiatric disorder was depression, which occurred in 26% of patients, followed by anxiety (21%). The most common pharmacotherapy for psychiatric conditions was tricyclic antidepressants (TCAs), followed by SSRIs and SNRIs. There was no significant difference in ED visits or hospitalization rates between patients with known psychiatric disorders versus those without. Common laboratory markers used to assess SCD (LDH, total bilirubin, reticulocyte count) were overall higher in the subset with psychiatric illnesses, but only LDH was statistically significantly higher. Surprisingly, SCD patients with psychiatric disorders used fewer opioids than those without with a lower Morphine Equivalent Daily Dose (although this was not statistically significant).
Conclusion: Although it is known that psychiatric illnesses in SCD patients are prevalent, exacerbate disease, and pose a cost burden, in our study there was nosignificant increase in hospitalizations or ED visits. However, it is notable that our study patient population was an outpatient population that is compliant and generally has access to resources including a robust behavioral health team and regular psychotherapy sessions. Due to these factors, ourdata may not be generalizable to the entire SCD patient population. Additionally, althoughlaboratorymarkers were overall poorer in the psychiatric population, they were not statistically significant, perhaps owing to the small sample size. Our study calls for a broader look at SCD patients with psychiatric illness, perhaps also to review these variables in SCD patients in the inpatient setting. A future direction could also be to evaluate the efficacy of psychiatric pharmacotherapy versus cognitive behavioral therapy in this patient population.
Word count: 518 words

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Table 1: Demographic and clinical characteristics of the study participants

Characteristic	n = 100
Medium age, years (IQR)	34.9 (27.0–45.8)
Sex, n	
Male	45
Female	55
Genotype, n	
HbSS	73
HbSC	20
HbS-β thal 0	6
HbS-β thal +	1
Comorbidities, n	
0	6
1	11
2	10
>2	74
Psychiatric disorders, n	33
Anxiety	21
Depression	26
Bipolar disorder	2
Others	2
Psychiatrist outpatient follow up, n	19
Psychiatric medications, n	24
Tricyclic antidepressants	11
SSRI	7
SSNI	7
Antipsychotics	4
Benzodiazepine	5
Others	1
Disease-modifying medications, n	
Received at least 1 treatment	68
Concurrent therapy	13
Hydroxyurea therapy	60
L-glutamate therapy	3
Voxelotor therapy	11
Crizanlizumab therapy	5
SCD-related ED/hospital admission during past year, n	
0	47
1	10
2	20
>2	23
Employed, n	43
Tobacco use, n	9
Alcohol use, n	27
Illicit drug use, n	15
Positive UDS other than prescribing opioids, n	15
MEDD, median (IQR)	60 (40–100)
Initial PHQ-9 score	2.0 (1.0–5.0)
Recent PHQ-9 score	3.5 (0.3–6.0)
Laboratory data	
Hemoglobin, mg/dL (IQR)	9.3 (8.1–10.1)
LDH (IQR)	319.3 (255.9–468.9)
Total bilirubin, IU/L (IQR)	2.0 (1.2–3.2)
Absolute reticulocyte count, $x10^3$ (IQR)	176 (108–275)

Table 2: Comparison between patients with and without psychiatric disorders

Characteristic	Psychiatric disorder		p-value
	Yes, n = 33	No, n = 67	
Medium age, years (IQR)	31.7 (26.2–46.5)	37.4 (29.6–44.2)	0.596
Sex, n			
Male	11 (33)	34 (51)	0.135
Female	22 (67)	33 (49)	
Genotype, n			
HbSS	25 (76)	48 (72)	0.793
HbSC	8 (24)	12 (18)	
HbS-β thal 0	0	6 (9)	
HbS-β thal +	0	1 (1)	
Comorbidities, n			
0	0	6 (9)	<0.001
1	1 (3)	10 (15)	
2	1 (3)	9 (13)	
>2	31 (94)	43 (64)	
Disease-modifying medications, n			
Received at least 1 treatment	22 (67)	44 (66)	-
Concurrent therapy	5 (15)	8 (12)	-
Hydroxyurea therapy	20 (61)	40 (60)	-
L-glutamate therapy	1 (3)	2 (3)	-
Voxelotor therapy	5 (15)	6 (9)	-
Crizanlizumab therapy	1 (3)	4 (6)	-
SCD-related ED/hospital admission during past year, n			
0	14 (42)	33 (49)	0.312
1	6 (18)	14 (21)	
2	3 (9)	7 (10)	
>2	10 (30)	13 (19)	
Employed, n	11 (33)	32 (48)	0.201
Tobacco use, n	5 (15)	4 (6)	0.152
Alcohol use, n	11 (33)	16 (24)	0.332
Illicit drug use, n	6 (18)	9 (13)	0.568
MEDD, median (IQR)	60 (40–102.5)	90 (51.3–156)	0.069
Initial PHQ-9 score	5 (3–8)	3 (0–5)	0.001
Recent PHQ-9 score	5 (2–8)	2 (0–3)	<0.001
Laboratory data			
Hemoglobin, mg/dL (IQR)	8.9 (8.0–9.7)	9.4 (8.1–10.5)	0.762
LDH (IQR)	412 (274–512)	308.3 (249.5–425)	0.014
Total bilirubin, IU/L (IQR)	2.3 (1.2–3.3)	1.9 (1.1–3.0)	0.864
Absolute reticulocyte count, $x10^3$ (IQR)	173 (112–269)	180 (106–277)	0.787

Figure 1

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