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## INTRODUCTION

- Pediatric patients with hemophilia, especially those who are on demand treatment, suffered from recurrent bleeding into their joints, causing limitation of their daily activities and risking irreversible joint damages.
- Restriction of physical activities, unpredictable bleeding, and concerns about joint destruction in the future have a great psychosocial impact on patients with hemophilia and their families.

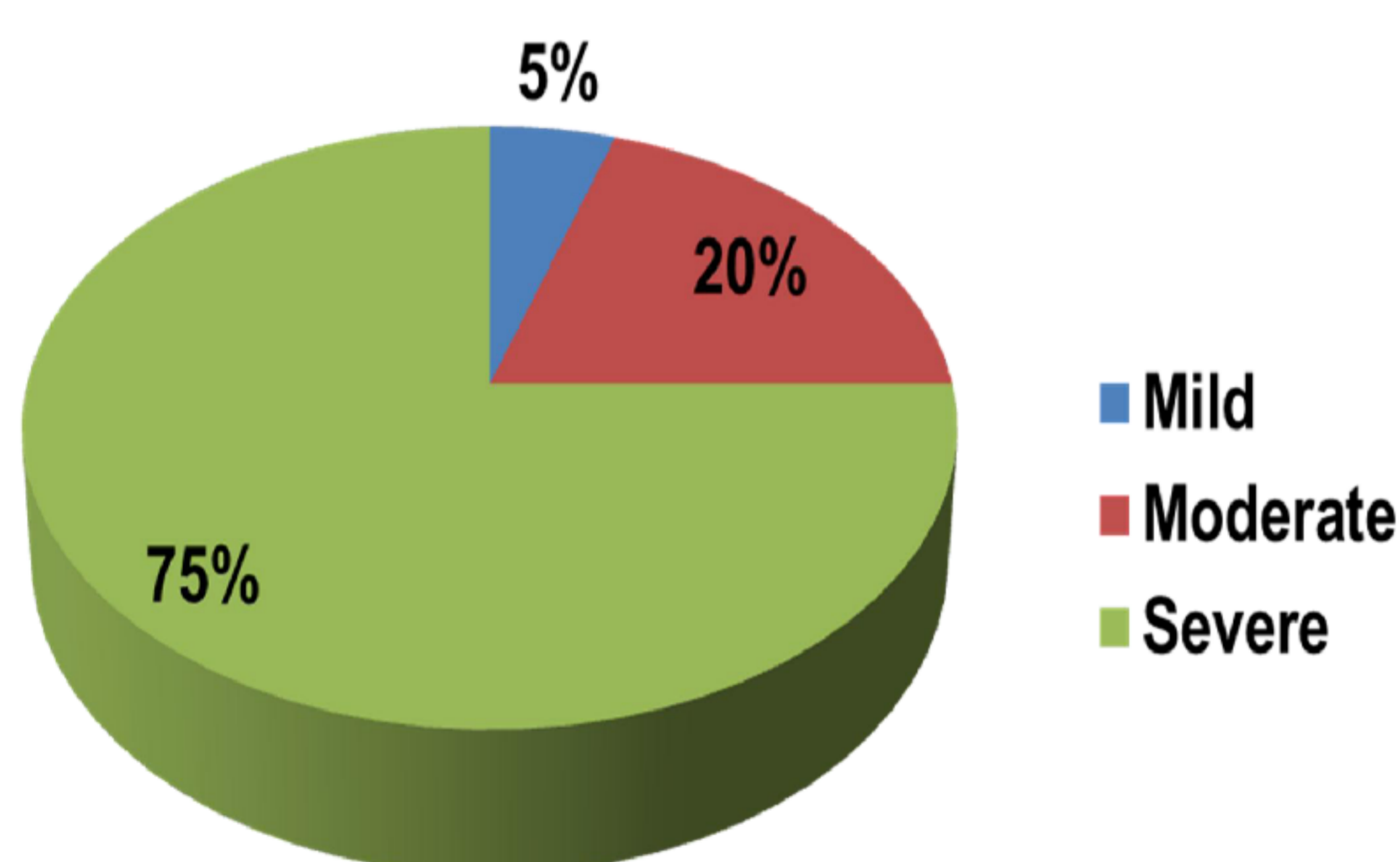
## OBJECTIVE & METHODS

- To assess psychosocial problems in pediatric patients with hemophilia comparing to healthy controls.
- Patients with hemophilia, aged 8-18 years and age-matched healthy male controls, were enrolled into the study.
- The Child Behavior Checklist (CBCL) rated by caregivers, were used to assess emotional and behavioral problems.
- The Children Depression Inventory (CDI) and the Multidimensional Anxiety Scale for Children (MASC), completed by the patients, were used to assess emotional problems.

## RESULTS

- 20 hemophiliac children and 20 sex- and age-matched controls were enrolled.
- 85% (17/20) of patients were diagnosed with hemophilia A.
- Only one hemophiliac patient had factor VIII inhibitor.
- Severity of disease as shown in Figure 1
- Mean age was 12.1 ± 2.8 years.
- All patients received on-demand factor concentrate as their treatment.

Figure 1: Severity of disease



- All patients had negative testing for anti-HIV.
- The internalizing and total problems scores as tested by CBCL were significantly higher in the patient group (Table 1).
- The school competence scale were also significantly lower in the patient group (Table 1).
- The CDI and MASC scores were comparable in the patients with hemophilia and the controls (Table 2).

Table 1: Comparison of CBCL between patient and control groups

CBCL (mean, SD)	Patients (N=20)	Controls (N=20)	Mean difference (95% CI)	P
Total problem score	42.00 (21.25)	20.40 (17.12)	21.6 (9.23-33.97)	0.001
Internalizing problems	12.20 (6.21)	4.80 (4.15)	7.40 (4.00-10.80)	<0.01
Anxious/depressed	4.40 (2.33)	2.30 (1.87)	2.10 (0.75-3.45)	0.003
Withdrawn	3.95 (2.61)	1.35 (1.23)	2.60 (1.28-3.90)	<0.01
Somatic complaints	3.85 (2.87)	1.15 (2.08)	2.70 (1.09-4.31)	0.002
Externalizing problems	11.00 (8.01)	6.50 (6.94)	4.50 (-0.30-9.30)	0.07
Delinquent behavior	3.15 (4.04)	2.10 (2.65)	1.05 (-1.14-3.24)	0.34
Aggressive behavior	7.85 (4.56)	4.40 (4.83)	3.45 (0.45-6.46)	0.03
Other problems				
Social problems	4.95 (2.28)	1.85 (1.93)	3.10 (1.75-4.45)	<0.01
Thought problems	3.40 (2.35)	2.10 (1.97)	1.30 (-0.09-2.69)	0.07
Attention problems	5.90 (3.70)	2.50 (2.74)	3.40 (1.31-5.49)	0.002
Total competence score	19.43 (4.53)	21.80 (4.91)	-2.37 (-5.40-0.65)	0.12
Activity	7.08 (1.93)	7.65 (3.29)	-0.57 (-2.29-1.15)	0.51
Sociability	8.38 (1.98)	9.15 (2.20)	-0.77 (-2.12-0.57)	0.25
School	4.20 (1.41)	5.00 (0.71)	-0.80 (-1.52 to -0.08)	0.03

Table 2: Comparison of CDI and MASC between patient and control groups

Scores, mean (SD)	Patients (N=20)	Controls (N=20)	Mean difference (95%CI)	P
CDI score	14.60 (5.40)	10.95 (6.59)	3.65 (-0.21-7.51)	0.06
MASC score	35.60 (11.52)	34.95 (12.42)	0.65 (-7.02-8.32)	0.87
Anxiety index	9.75 (3.64)	9.50 (3.72)	0.25 (-2.11-2.61)	0.83

## CONCLUSIONS

- Pediatric patients with hemophilia have higher emotional and behavioral problems in certain aspects, and lower school competence than healthy controls.
- Close surveillance of psychosocial functioning and early intervention are recommended in pediatric patients with hemophilia, especially those who are given on-demand treatment.

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