Journal of Pediatric Urology (2015) **11**, 75.e1–75.e7

Screening for depression and anxiety in childhood neurogenic bladder dysfunction

Aashish T. Kabra [a], Paul J. Feustel [b], Barry A. Kogan [c]

[a]Department of Urology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, USA

[b]Albany Medical Center, Albany, NY, USA

[c]Urological Institute of Northeastern New York Community Care Physicians, Albany, NY, USA

Correspondence to: A.T. Kabra, Department of Urology, The University of Texas Health Science Center at San Antonio 7703 Floyd Curl Drive Mail Code 7845 San Antonio, Texas, 78229-3900, Tel.: +1 832 457 8766; fax: +1 210 567 6868

kabra@uthscsa.edu (A.T. Kabra)

Keywords
Screening; Depression; Anxiety; Spina bifida; Children; Caregivers

Received 25 April 2014
Accepted 10 November 2014
Available online 26 February 2015

Summary

Introduction

Patients with chronic illnesses are known to have anxiety disorders and are likely to be depressed. Anxiety and depression (A/D) has been studied in adults with spina bifida (SB), however, no study has directly screened for A/D in pediatric patients with neurogenic bladder (NB) and their caregivers.

Objective

The aims of our study were to determine the prevalence of A/D in caregivers of all children with SB and other NB dysfunction and in adolescents with validated screening measures.

Study design & patients

This was a preliminary cross-sectional screening investigation for A/D in pediatric patients with NB and their caregivers and adolescents with NB. Pediatric patients were defined as ages birth to 19 years and adolescents as ages 10 years–19 years. A caregiver was self-defined as a primary parent/guardian who took care of the pediatric patient for a majority of their time on a daily basis.

Materials and methods

We contacted 75 families by mail, of which 15 returned the consent and completed the questionnaires. Subsequently, 25 consecutive families whose children were seen for routine office appointments by the pediatric urology service at the Albany Medical Center in New York participated in person. 22 adolescents completed the Hospital Anxiety and Depression Scale (HADS). 47 caregivers completed both the HADS and the Center for Epidemiologic Studies Depression Scale (CES-D).

Results

Depression among adolescents: Of the 22 adolescents who completed the HADS, the median HADS score was 5.5 (Inter-quartile range (IQR): 1.75–8.75) for anxiety and 1.5 (IQR: 0–4.25) for depression; both scores were within the normal range ($<8/21$). Individual abnormal HADS scores ($\geq 8/21$) were seen in 6/22 (27%) for anxiety and 1/22 (5%) for depression.

Anxiety and depression among caregivers: Of the 47 caregivers who completed the HADS and CES-D, the median HADS score was 7 (IQR: 4–11) for anxiety and 4 (IQR: 1–7) for depression; both scores were within the normal range. Individual abnormal HADS scores were seen in 23/47 (49%) for anxiety and 10/47 (21%) for depression. Abnormal CES-D scores (>15) were seen in 15/47 (32%). The median CES-D scores were 8 (IQR: 3–19).

Discussion

In this preliminary screening study, we found considerable anxiety in adolescents with NB and both A/D in caregivers. When screening by two validated surveys, adolescents with NB had median scores for A/D that were normal; yet 27% of these patients exhibited scores for anxiety that outwit the normal range. For the caregivers, the median scores were also normal; yet 49% and 32% had scores for A/D, respectively, that were abnormal. SB among pediatric patients has been shown to result in alterations in daily functioning and to increase the dependency on adult care, factors that are associated with altered self-concept, psychological distress, including A/D. Our findings underscore such results from previous studies. In caregivers, we observed a higher prevalence of anxiety than adolescents; similar findings have been reported for caregivers of other chronic conditions. Surprisingly, in caregivers, a lower percentage of scores for depression was observed. Although we have no data on the cause of this finding this may be related to a caregiver's ability to adapt to the demands of the situation in chronic illness or perhaps, lower expectations. The cross-sectional nature of our study limited us to draw any causal relationships for anxiety or depression between neurogenic patients and their caregivers.

Conclusion

Despite our study limitations, the prevalence of anxiety in adolescents and in the caregivers is striking. Our data highlight that clinicians should screen for A/D more aggressively in pediatric patients with NB dysfunction and in their caregivers.

http://dx.doi.org/10.1016/j.jpurol.2014.11.017

Table Summary table of anxiety and depression scores.

Anxiety and depression in adolescents (10–19 years in age)

	No.	HADS-A Median (IQR)	# Abnormal (%)	HADS-D Median (IQR)	# Abnormal (%)
All	22	5.5 (1.75–8.75)	6 (27)	1.5 (0–4.25)	1 (5)

Anxiety and depression in primary caregivers of patients (0–19 years in age)

	No.	HADS-A Median (IQR)	# Abnormal (%)	HADS-D Median (IQR)	# Abnormal (%)	CES-D Median (IQR)	# Abnormal (%)
All	47	7 (4–11)	23 (49)	4 (1–7)	10 (21)	8 (3–19)	15 (32)

Abnormal HADS scores, (≥8/21).
Abnormal CES-D scores, (>15/60).

Introduction

Patients with chronic illnesses are known to have anxiety disorders and are likely to be depressed [1,2]. These patients have shown less compliance to medical treatments and adherence to self-care than patients without depression and/or report a diminished quality of life (QoL) [3].

Spina bifida (SB), a chronic disorder, is a major congenital neural tube defect. The urologic manifestations of SB require considerable care, management [4], and treatment adherence by children and their families [5]. With intervention, many children gain continence through intermittent catheterization and medications. Over half of pediatric patients suffer from substantial upper urinary tract damage due to failure to care for the lower urinary tract [4,6]. Like patients with other chronic diseases, anxiety and depression (A/D) among children with neurogenic bladder (NB) could contribute to non-adherence in treatment regimens, with severe consequences [4,6].

The burden placed on caregivers of children with chronic disabling disease is apparent. Previous studies demonstrate that caregivers of children with chronic illnesses are at greater risk for stress, depression [7–9] and chronic sorrow [10]. QoL for children with SB seems related to family functioning and parental hope [11,12]. Since the responsibility for the care of children with NB is placed on the caregiver, A/D in the caregivers is likely to have significant consequences.

A/D has been studied in adults with SB [2]. No study has directly screened for A/D in pediatric patients and their caregivers. We hypothesized that children with SB and their caregivers would have high rates of A/D. The objective of our study was to investigate the prevalence of A/D in caregivers of children with NB and in adolescents (those > 10 years of age) with validated screening tools.

Materials and methods

Our study was approved by the Institutional Review Board at Albany Medical Center.

Patients

Caregivers of all pediatric patients with NB and adolescents aged 10–19 years with NB seen by the pediatric urology service were offered the opportunity to participate. Seventy-five families were contacted by mail based on a mailing list from a previous study. No families refused to participate. Fifteen returned the consent and completed the questionnaires. Subsequently, 25 consecutive families whose children were seen for routine office appointments were asked to participate in person. All but one agreed to take part; 23 out of 24 families completed the questionnaires. When two caregivers responded for a single pediatric patient, their responses were assumed to be independent.

Procedures

After completion of informed consent, measures were administered during an office visit or by mail according to the family preference. Adolescent patients themselves or the primary caregivers completed the questionnaires independently, with research staff available to assist with questions. Caregiver was self-defined as a primary parent/guardian who took care of the pediatric NB patient for the majority of their time on a routine basis.

This was a cross-sectional study. We evaluated symptoms of A/D once for adolescents and for their caregiver. Characteristics, such as history of urinary tract infections (UTIs), renal scarring/abnormal kidney, continence, presence of ventriculoperitoneal (VP) shunt, and Medicaid insurance were assessed for all pediatric patients.

Adolescents, aged 10–19 years with SB or other NB abnormalities completed the Hospital Anxiety and Depression Scale (HADS): HADS-A, designed to assess anxiety, and HADS-D, designed to assess depression. HADS is a brief, reliable, and valid screening measure for A/D. It is a 14-item scale with seven items each for A/D; each item can be scored between 0 and 3. HADS scores can range from 0 to 21 for either anxiety or depression with a well-established clinical cut-off point of 8 out of 21 for an abnormal score and is specifically developed for patients with chronic medical conditions [13,14]. HADS does not include symptoms of depression that can confound an actual illness (e.g., fatigue). The psychometric properties of HADS are validated in adolescents [15,16]. We administered HADS only to children age >10 years. Caregivers of pediatric patients (ages birth to 19 years) completed the HADS-A, HADS-D, and the Center for Epidemiologic Studies Depression Scale (CES-D). CES-D is designed to assess depression in community samples, and