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ANNOTATION

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How accurate is the recall of bowel habits in children with defaecation disorders ?

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Abstract The aim was to assess in children with defaecation disorders, the accuracy of recalled information as provided by the child and/or parents compared to diary information and to evaluate its effect on diagnostic grouping. In this prospective study, recalled information, obtained initially by a telephone interview, was compared with recorded information provided by a 4-week diary. Recalled and recorded data were compared using Kappa indices. Subsequently, children were assigned to three diagnostic groups: constipation, solitary encopresis and a rest group. Based on these diagnoses, the first two groups were allocated for laxative treatment. Analysis of recalled and recorded data was performed in 46 children (5–14 years). Most defaecation parameters showed fair agreement, only limited agreement occurred for frequency of soiling episodes. Identical clinical groups using the two methods were obtained in 63% of the children. Particularly, the assessment of large amounts of stool and the number of soiling episodes were responsible for the shift in the diagnostic groups. A total of 83% children were correctly allocated for treatment using recalled data.

Conclusion Recalled data can accurately be used in a daily clinical setting but special attention is necessary for soiling episodes and the size of stool.

Key words Constipation · Solitary encopresis · History · Kappa-index

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Introduction

Defaecation disorders in children occur frequently and may lead to a variety of psychosocial problems [4, 9]. In children beyond the age of 4 years, soiling and encopresis are socially unacceptable and often interfere with daily activities. This may result in over- or underestimation of these complaints by the parents. Studies in adults with constipation showed a discrepancy between objectively measured colonic transit time and the recall of defaecation frequency [3, 16]. A study in children with megarectum showed discrepancy between recalled and recorded defaecation frequency [15]. It has therefore been suggested that accurate information can only be obtained with a bowel diary [13]. In contrast, a study in adults with irritable bowel syndrome demonstrated fair agreement for recorded and recalled defaecation frequency [11]. In clinical practice, the diagnosis of defaecation disorders such as constipation and solitary encopresis depends mainly on recalled information about defaecation habits [1, 2]. In particular, a correct diagnosis is necessary to choose an appropriate treatment [1, 10]. Since there are no reported studies regarding the recall of bowel habits in children, our aim was to investigate the accuracy of defaecation history in children as provided by the child and/or parents.

Materials and methods

Between March and August 1994, 53 children with alleged symptoms of constipation were referred by paediatricians, general practitioners and psychiatrists to the outpatient clinic of the Academic Hospital to participate in a study using laxative treatment and biofeedback training in the treatment of constipation.

Before the visit, parents were asked about the defaecation history and other symptoms of their child by telephone (Table 1). No advice regarding laxative treatment was given and the parents were unaware that a specific inquiry was being made, since we wanted to simulate the conditions of normal bowel history. After the interview parents were asked to keep a bowel diary of their child in order to be informed about the symptoms at the first visit. They were asked to record the parameters as questioned during the

Table 1 Recalled and recorded data of the different symptoms with the Kappa indices

Symptoms	Recorded yes	Recorded no	Kappa
Defaecation frequency < 3/week			54.9
recall yes	10	6	
recall no	3	27	
soiling and/or encopresis < 2/week			45.4
recall yes	6	2	
recall no	7	31	
soiling < 2/week			0.05
recall yes	11	13	
recall no	9	13	
encopresis < 2/week			53.4
recall yes	12	4	
recall no	6	24	
large amount of stools			44.7
recall yes	11	6	
recall no	6	24	
painful defaecation			29.6
recall yes	8	4	
recall no	11	24	
occurrence of recurrent abdominal pain			55.2
recall yes	23	8	
recall no	2	13	
use of medication			75.1
recall yes	30	2	
recall no	3	12	

telephone interview and to fill in the diary with the help of the child, at the end of every day for a period of at least 4 weeks. This period was chosen to obtain accurate and reproducible information and data on the largeness of stool. During the first visit, data from the diary were checked with the parents and compared with the telephone data.

To appraise the importance of recalled and recorded data for clinical practice we analysed both measurements and divided the children into three groups: constipation, solitary encopresis and a rest group. In accordance with our previous study, [1] constipation was considered when children met at least two of the four following criteria: bowel frequency < 3 per week; soiling and/or encopresis frequency ≥ 2 per week; large amounts of stool once per 7–30 days and an abdominal and/or rectal palpable mass. Soiling was defined as the loss of loose stools in the underwear and encopresis as the passage of a normal bowel movement in the underwear after the age of 4 years [8]. Large amounts of stool were defined as a big lump of stool which could not easily be flushed through the toilet. The diagnosis of solitary encopresis was considered when children had faecal incontinence, without any other criteria of constipation [1, 2]. The rest group consisted mainly of children with abdominal pain without other signs of constipation.

Analysis

Since diagnostic criteria rely on cut-off points regarding defaecation history, all values were dichotomised. Agreement between recalled and recorded data was tested with the kappa index (K). K is an index of concordance that corrects for chance agreement. It is the most appropriate index for denoting concordance in dichotomous data [5, 14]. K, using cutoff points according to the definition of paediatric constipation as mentioned above, were calculated as indicators of agreement and were considered poor, fair, good, excellent and perfect when they met values of 0–0.40, 0.41–0.60, 0.61–0.80, 0.81–1.0 and 1, respectively [5].

Results

In the 5-month study period 53 children were interviewed by telephone and 46 children were classified as eligible. Seven children could not be included; because of missing data (1), illness of parent (1), spontaneous improvement (2), no visit to the hospital (3). The group of 46 children encompassed 29 boys and 17 girls with a median age of 8 years (range 5–14 years). Analysis of the recalled and recorded data resulted in a mean (range) defaecation frequency of 5.0 (0–21) and 5.5 (0–14) per week, respectively. The mean soiling frequency, using recalled and recorded data, was 4.1 (0–21) and 3.5 (0–14), respectively. The mean number of encopresis episodes in both inquiries was 6.6 (0–28) and 4.9 (0–35) per week, respectively.

Recalled and recorded defaecation frequency varied widely (Fig. 1), and showed fair agreement as well as for the number of encopresis episodes and the combination of soiling and encopresis episodes, K = 54.9, K = 53.4 and K = 45.4, respectively. Evaluation of soiling episodes only showed poor agreement (K = 0.05) (Table 1). The correlation coefficients for defaecation frequency, soiling and encopresis episodes were 0.60, 0.11 and 0.61 respectively.

Recalled and recorded data regarding largeness of stool and abdominal pain demonstrated fair agreement (K = 44.7 and K = 55.2, respectively). Poor agreement was found for painful defaecation (K = 29.6). In 9

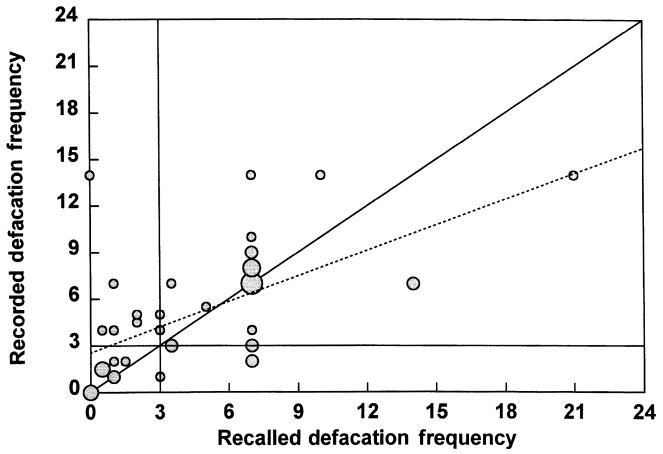

Fig. 1 Correlation between recalled and recorded defaecation frequency. *Horizontal and vertical lines* indicate clinically relevant cut-off points, *solid diagonal line* indicates identical frequencies, *dotted diagonal line* indicates the fitted regression line, *circle size* is proportional to the number of patients

- 1 patient
- 2 patients
- 4 patients
- 6 patients

children minor changes in the use of laxatives were observed between the telephone interview and the first visit. However, good agreement (K = 75.1) and a correlation coefficient of 0.85 was demonstrated for the use of laxatives.

Diagnostic grouping with recalled data assigned 22 children (48%) to the constipation group; 17 (37%) children to the solitary encopresis group and 7 children to the rest group (Table 2). Recorded data divided 23 (50%) children to the constipation group, 12 (26%) children to the solitary encopresis and 11 children to the rest group.

Identical diagnosis was observed in 63% (29/46) of the children with either method (Table 2). Six children shifted from the constipation (3) to the solitary encopresis group or vice versa (3). Treatment of these children consisted of a combination of dietary advice, toilet training, laxatives and additional biofeedback training. Children in the rest group did not receive laxative treatment. Children assigned to the two treatment groups, (constipation and solitary encopresis), were in 83% accurately allocated for treatment using recalled data. Six children shifted to the rest group and two children shifted from the rest group to a treatment group by the evaluation of recalled and recorded data.

Table 2 Comparison of the different diagnoses between recalled and recorded data

Recorded → Recalled ↓	Constipation	Encopresis	Rest	Total
Constipation	16	3	3	22
Encopresis	6	8	3	17
Rest	1	1	5	7
Total	23	12	11	46

Discussion

Many studies on constipation are based on a careful defaecation history, relying on patient or parent recall [1, 2, 16]. However, some have asserted that recalled information concerning defaecation problems is not always accurate and that a diary is necessary for correct information to start treatment [13]. This study evaluated the accuracy of recalled versus recorded information on defaecation as well as the correctness to classify children to the paediatric constipation and solitary encopresis group using recalled information. In summary, fair agreement was found and in 63% of the children identical diagnosis was achieved using recalled and recorded data. In 83% of the children agreement was found about the necessity to start laxative treatment. Other studies, investigating the reliability and accuracy of recall by the parents compared with recording methods regarding issues like childbirth, developmental events and illness or injury in their children, described similar results [6, 7, 12].

However, some aspects of the design should be discussed. Firstly, a telephone interview is not identical to a diary report. During the telephone interview, parents had to answer within minutes, while the recorded data were collected over weeks. Secondly, the telephone data concerned a period preceding the collection of recorded data. It is possible that the symptomatology changed during the interval or that the parents' recall was influenced by their worst experiences. Thirdly, recording may have influenced the bowel habit of the child and consequently their defaecation pattern. Fair agreement was found for the frequency of defaecation and the number of encopresis episodes, while poor agreement was found for the soiling episodes. It is our experience that the meaning of soiling as a symptom of constipation had to be explained to many parents to obtain accurate information about the soiling episodes. In 9 children the soiling frequency was overestimated and in 13 it was underestimated. Overestimation might be due to exaggeration by parents or if the soiling greatly interfered with social activities. On the other hand, underestimation could be explained if parents paid less attention and considered soiling to be the result of inadequate cleaning after defaecation.

Other symptoms, e.g. largeness of stool and abdominal pain, showed fair agreement between recalled and recorded data. Largeness of stool was often misinterpreted and could only adequately be checked by showing a clay model [17]. As known, most parents seldomly inspect their children's stool. Thus, an inaccurate report by the parents could be expected on the largeness of stool [8]. In contrast, painful defaecation showed only limited agreement, primarily as a result of underestimation of its occurrence.

Misinterpretation of the size of stool influenced the assignment to diagnostic grouping. Importantly, the production of large amounts of stool in encopretic children classified them by definition to the paediatric constipation group. Therefore, correct information on the size of stool is important to diagnose constipation.

In 63% of the children identical diagnoses were found with recalled and recorded data. As shown in Table 2, most children shifted from the constipation to the solitary encopresis group or vice versa.

Merging of the two treatment groups showed that 83% of the children would accurately receive laxative treatment using recalled data; 6 children would have received treatment without necessity and 2 children would not have received treatment despite serious defaecation difficulties given the recorded data. Consequently, accurate defaecation history and allocation of children to treatment groups is achievable using recalled data.

In conclusion, fair agreement was found between recalled and recorded data, ascertaining clinically relevant diagnoses in two-thirds of the patients using recalled data similarly, in the majority (83%), agreement was obtained to the allocation for treatment. Thus, parents provide acceptable information to start treatment in children with defaecation problems.

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