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Decision making among different treatment options for neurologically impaired boys with undescended testis: A multinational pediatric survey

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Abstract *Objective:* To determine the attitude of referring pediatricians towards the decision of treatment modalities for undescended testis (UDT) in neurologic impaired boys (NIB).
Methods and materials: An online questionnaire was offered to registered pediatricians in Austria and Germany for online completion.
Results: 221 male (61.6%) and 138 female (38.4%) pediatricians completed the survey; 326 (90.8%) believe that UDT should be treated according to national guidelines; 31 (8.6%) believe that UDT should be treated according to the parental wish, whereas only 2 (0.6%) tend to no treatment at all. Tumor prophylaxis, further sexual life, legal concerns, risks of anesthesia, and the choice of the parents have major impact on the perception of UDT. Moreover, fertility and limited life expectancy seem to be of minor importance only. In general, Pearson $\chi 2$ test could not identify age and sex of pediatricians as significant predictor of how the importance of the treatment of UDT is appraised.
Conclusion: From the pediatric point of view UDT in NIB is an important issue and should be treated according to guidelines. Nevertheless, this study indicates the problems in decision-making and choosing the best management for UDT in NIB. Undoubtedly, further ethical discussion is needed to optimize treatment of UDT in NIB.

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Introduction

UDT, which occurs in 2—9% of boys born at term, is one of the most common congenital abnormalities [1,2]. It is a major risk factor for testicular tumor, which is currently the most commonly occurring malignant disease in young men [3]. UDT is also a risk factor for impaired spermatogenesis and male infertility [4] and is more frequently seen in NIB. Treatment options for UDT in NIB are the matter of controversial discussions. Boys with cerebral palsy and NIB are an extremely heterogeneous group ranging from simple impaired motor skills to full time nursing cares with the need of individualized therapy of UDT. In this article we sought to determine the attitude of referring pediatricians towards the decision of treatment modalities for UDT in NIB.

Materials and methods

A short questionnaire exploring the attitude of referring pediatricians towards the decision of treatment modalities for UDT in NIB was offered to registered pediatricians in Austria and Germany for online completion. Pediatricians were contacted via the Austrian and German Society of Pediatrics and Adolescent Medicine. The questionnaire consisted of 12 multiple choice questions (shown in Table 1). Anonymous data collection was performed using a Structured Query Language database (client—server model for database access, Server 1&1, Vienna, Austria). Statistical analysis was performed using SPSS v.17.0 (IBM Corp., Somers, NY, USA). To identify significant associations between demographic factors of the participating physicians (sex, age) and the importance of the items (fertility, tumor prophylaxis, further sexual life, limited life expectancy, legal concerns, high risk anesthesia, parental wishes) influencing the decision-making process of treatment of UDT in NIB, we used the Pearson $\chi 2$ test. $p < 0.05$ was considered significant.

Results

Between June and December 2010 359 pediatricians completed the survey: 221 male (61.6%), 138 female (38.4%); 3 20—30years (0.8%), 80 31—40years (22.3%), 136 41—50years (37.9%), 107 51—60years (29.8%) and 31 older than 61 years (9.2%). Fig. 1 displays how pediatricians rate the treatment of UDT in NIB in general. 326 pediatricians (90.8%) believe that UDT should be treated according to guidelines (i.e. German study group Pediatric Endocrinology and Pediatric Surgery, Austrian Society of Pediatric Urology); 31 (8.6%) of the pediatricians believe that UDT should be treated according to the parental wish, whereas only 2 pediatricians (0.6%) think that UDT should not be treated at all. Fig. 2 displays how the importance of the subjects fertility, tumor prophylaxis, further sexual life, limited life expectancy, legal concerns ("You forgot to treat the testicles!"), high risk anesthesia and parental wishes feature in the decision-making process. Using the Pearson $\chi 2$ test, we could not find differences in the ratings for sex and age. Nevertheless, there were two exceptions: (1) younger pediatricians rate the risk of anesthesia more important than older pediatricians ($p = 0.011$), (2) female pediatricians estimate the parents' final decision more important than male pediatricians ($p = 0.006$).

Discussion

Rundle et al. in 1980 noticed the high incidence of UDT in severely NIB [5]. Cortada and Kousseff found out that UDT was significantly more common in children with mental retardation due to chromosomal aberrations, single gene disorders, perinatal/postnatal injuries, and particularly in those diagnosed with cerebral palsy [6]. In a study by Smith et al. it was concluded that the high rate of UDT in patients with cerebral palsy may be caused by spasticity of the cremaster muscle [7].

A survey of pediatric surgeons in France about orchidopexy in patients presenting with severe encephalopathy showed an enormous disparity in treatment options between different centers symbolizing an ethical dilemma [8]. Our survey showed that the majority of pediatricians regard UDT in NIB as an important issue. Tumor prophylaxis, legal concerns, sexuality, risks of anesthesia, and the wishes of the parents have a major impact on the perception of UDT in the NIB. Fertility and limited life expectancy seem to be only of minor importance.

Table 1 Questionnaire for referring pediatricians concerning the decision-making process in the treatment of UDT in NIB.

Age?	In years
Sex?	Female, Male
How should undescended testis in the neurologically impaired boy be treated?	Not at all, According to guidelines, Parents' wish
Do parents of neurologically impaired boys ask you for treatment of undescended testis?	Never, Sometimes, Frequently, Always
How important is undescended testis in the therapeutic concept of a neurologically impaired boy?	Not important, Minor importance, Important, Very important
Is the factor **infertility** important in the treatment of undescended testis in the neurologically impaired boy?	
Is the factor **prevention of testicular neoplasm** important…?	
Is the factor **sexuality** important…?	
Is the factor **life expectancy** important…?	
Is the factor **legal aspects** important… ("You forgot to treat the testicles!")?	
Is the factor **high risk for anesthesia/surgery** important…?	
Is the factor **preferences of the parents** important…?	