Androgen deprivation therapy of self-identifying, help-seeking pedophiles in the Dunkelfeld

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Abstract

Androgen deprivation therapy (ADT) is considered an effective strategy in sexual offender treatment. However, the evidence base concerning its effects on sexual arousal control is limited. Past research has focused almost exclusively on men in forensic contexts.

The present retrospective observational study provided data on ADT in a sample of self-identifying, help-seeking pedohebephilic men applying for a one-year group therapy program. Factors possibly influencing the readiness to take up or discontinue ADT were presented. Effects of a combination of ADT and group psychotherapy program on changes in paraphilic sexual behavior and associated psychological factors were examined.

The proportion of men having taken up ADT was rather small (n=15). Greater awareness of potentially risky situations to commit child sexual offenses and self-rated uncontrollability of sexual urges were identified as characterizing men resorting to ADT. Additionally, these men were initially more open to include medical treatment.

Examination of the effects of ADT and psychotherapy was limited to a sample of six men providing complete data sets. Descriptive data demonstrated a reduction of paraphilic sexual behaviors, an increase of risk-awareness and self-efficacy, and a decrease of offense-supportive cognitions and self-esteem. The present study underlined the importance of careful education and monitoring of self-identifying, help-seeking pedohebephilic patients interested in ADT concerning the effects and side effects of the treatment in a clinical context.

Keywords: cyproterone acetate, GnRH analogues, androgen deprivation therapy, pedophilia, psychologically meaningful factors, paraphilic sexual behavior

Introduction

Androgen deprivation therapy (ADT) is an important element in the treatment of sexual offenders against children in order to prevent further child sexual victimization. Currently, two classes of drugs are used regularly. These include anti-androgens and analogues of Gonadotropin Releasing Hormone (GnRH analogues). Anti-androgens approved for the treatment of sexual disorders differ according to national regulations. While in the United States, medroxyprogesterone acetate (MPA) is approved for as an anti-androgen in the treatment of sexual disorders, the German national regulatory institution (Federal Institute for Drugs and Medical Devices, BfArM), allows only cyproterone acetate (CPA). GnRH analogues include a variety of substances. While formerly restricted to off-label use in Germany, recently a drug based on Triptorelin has been approved for the use in sexual disorders.

McGrath and colleagues conducted a survey on current practice of sexual offender treatment in North America (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010). For the US they found that drug treatment was offered in 17.6% of residential programs and 16.7% of community programs. In Canada, 75% of residential and 63.2% of community based treatment programs provided pharmacological treatment for sexual arousal control. In a total of nineteen community programs participating in their survey, eight used GnRH analogues, four used MPA, and five used CPA. Of the eight residential programs participating, six used GnRH analogues, four MPA, and four CPA.

Czerny and colleagues assessed the use of ADT in German forensic hospitals retrieving data from 2070 patients (Czerny, Briken, & Berner, 2002). Of 474 patients detained for sexual offenses, 12% received ADT, and half each using CPA and GnRH analogues.

Effectiveness of ADT for Sexual Recidivism

Despite its widespread use, the empirical basis of the effectiveness of ADT in sexual offenders is low. In a recent review, Rice and Harris (2011) noted that “the empirical studies of sex offender treatment have generally been methodologically weak, and the studies of recidivism following surgical and pharmacological treatments have used the weakest designs of all“(p. 323). A major restriction in this field was the composition of control groups from patients refusing ADT.

Two meta-analyses on treatment effects in sexual offender therapy integrating studies on hormonal treatment came to contradictory conclusions. In his meta-analysis, Hall (1995) found that studies on hormonal treatment yielded higher effect-sizes than studies on behavioral treatment alone, though effect sizes did not differ from those of studies on cognitive-behavioral treatment. One of the largest effect sizes in this analysis occurred in a study on surgical castration that did not comprise additional treatment (Wille, & Beier, 1989). Hall concluded that hormonal treatment and cognitive behavioral treatment were effective in preventing sexual recidivism. This finding was challenged by a later meta-analysis (Loesel, & Schmucker, 2005). They found studies reporting the effects of hormonal treatment yielded the largest effects sizes, too. However, studies on surgical castration provided extraordinarily high and homogeneous effects and were excluded from further analyses. In a hierarchical regression analysis taking into account study design, sample size, treatment setting and involvement of authors, effects of hormonal treatment contributed no further explanation of variance. Therefore, Loesel and Schmucker concluded, that effects reported in studies on hormonal treatment were confounded with other study variables.

Current evidence for effects of ADT with CPA and GnRH analogues in sexual offenders

In the following sections we will report the effects of cyproterone acetate and GnRH treatment, as these are the only options available for ADT in Germany.

CPA

CPA is a synthetic steroid acting as a competitive inhibitor at the testosterone receptor. A progestational effect of the drug prevents up-regulation of GnRH incretion. CPA is available as tablets of ten or fifty milligrams and as a depot injection of 300 milligrams administered every ten to fourteen days.

For CPA, studies from the 1970s to the 1990s were typically open trials in large samples of convicted sexual offenders (Davies, 1974; Laschet, & Laschet, 1971, 1975; Mothes, 1976). Notably, data on psychosexual factors was mostly restricted to clinicians' estimation. A number of controlled trials in small samples found effects on several realms of sexual arousal. Frequent findings included a reduction of frequency of sexual fantasizing and sexual activities including masturbation, reduction of morning and spontaneous erections, and reduced sexual arousal in penile plethysmograph and self-report (Bancroft, Tennent, Loucas, & Cass, 1974; Cooper, 1981; Cooper, Sandhu, Losztyn, & Cernovsky, 1992). The largest trial was a study of Bradford and Pawlak (1993). They presented data of a randomized double-blind placebo controlled cross-over study in a sample of nineteen paraphilically inclined men with criminal charges.

Effects found for CPA over placebo lay in a reduction of general distress as measured with the Brief Psychiatric Rating Scale and self-reported sexual activity. Self-reported sexual arousal to images was reduced in the CPA phases but not more than under placebo. Physiological measures of sexual arousal revealed no significant changes.

GNRH analogues

GnRH analogues lower the blood levels of luteinizing hormone (LH) and follicle stimulating hormone (FSH) by deliberate overstimulation of the pituitary gland. After an initial increase of LH and FSH incretion accompanied by a rise of testosterone blood levels ("flare up"), pituitary gonadotropin incretion ceases during the first two weeks of treatment leading to a decrease of testosterone production in the testes. GnRH analogues are administered as depot injections in intervals of either four or twelve weeks. Concomitant treatment with CPA in the first several weeks prevents effects of the initial flare up.

A majority of studies on GnRH analogues provided data on single cases (Cooper & Cernovsky, 1994; Dickey, 1992; Rousseau, Couture, Dupont, Labrie, & Couture, 1990) or case series based on clinical observation (Czerny, Briken, & Berner, 2002; Krueger and Kaplan, 2002; Thibaut, Cordier, & Kuhn, 1996). Along with the few existing studies employing a controlled design (Roesler, & Witztum, 1998; Briken, Nika, & Berner, 2001), unanimously strong effects of GnRH analogues on the reduction of paraphilic fantasies and behaviors were reported. In a prospective, repeated measures, nonrandomized, and single blind study to investigate the suppression of pedophilic urges and arousability under leuprolide acetate, Schober and colleagues additionally reported on psychophysiological measures such as penile plethysmography, polygraph testing, and visual reaction time (Schober et al., 2005). Findings in penile plethysmography and polygraph testing underlined the decreased arousal under GnRH analogues therapy, while visual reaction time measures of pedophilic interest remained unchanged. However, Czerny et al. (2002) reported that according to the medical staff responsible, 17% of the patients treated were rated as exhibiting no treatment effects. Despite the potentially impairing side effects of the medication including erectile failure, hot flushes, and decreased bone mineral density, most studies reported the treatment to be well accepted by the patients.

Criticism on current evidence

The number of studies reporting effects of CPA and GnRH analogues treatment in sexual offenders is low and there are limitations as to their generalizability. Apart from early observational studies, all studies had severe restrictions in samples size. This restriction appears to stem from patients' reluctance to undergo anti- libidinal treatment leading to low numbers of volunteers and pronounced drop-out rates. In his meta-analysis on treatment effects of sexual offender treatment, Hall (1995) found that adherence to hormonal treatment was significantly lower than to any psychosocial intervention. For CPA, the one study involving the largest sample in a methodologically demanding approach, physiological data did not clearly support ADT for sexual arousal control, though self-report measures indicated effects on reduction of psychological distress and sexual activity (Bradford, & Pawlak, 1993).

All studies published relied on detected or convicted sexual offenders. Though most studies stressed on the point that participation in the study was not to influence the court's ruling, fear of legal repression and reconviction in these men is highly likely to be a motivation to seek hormonal treatment and may influence self-report in a socially desirable way. Recently a therapeutic approach emerged addressing individuals who seek help, triggered by the desire to control their self-identified sexual urges and fantasies involving prepubescent or pubescent children in order to prevent child sexual victimization without being under legal pressure (Beier et al., 2009; Schaefer et al., 2010). This group, fulfilling DSM-IV-TR criteria for pedophilia or paraphilia not otherwise specified (hebephilia), includes men who have never acted upon their sexual urges and fantasies by committing child sexual abuse (CSA) and/or using child abusive images, so- called child pornography (CP), or those undetected for their offending behavior at time of assessment (i.e., Dunkelfeld) and may more likely provide data less biased by fear of legal or social reprimand.

Last, none of the measures on paraphilic sexual behavior included the use of sexually explicit or non- explicit images of children (SENIC). This is not surprising, as the development of specific treatment for this class of sexual offense has only recently entered into the focus of sexual offender research and very few studies on this topic in general exist. However, the use of CP highly correlates with pedophilic interest as measured in PPG (Seto, Cantor, & Blanchard, 2006) and high rates of CSA in CP offenders have been suggested (Bourke, & Hernandez, 2009).

The present study

The present study is a retrospective observational study describing self-identified, help-seeking pedohebephiles taking up hormonal treatment, aiming at expanding on previous research by providing data for clinically diagnosed pedohebephilic men receiving treatment outside judicial proceedings and describing effects of combined hormonal treatment and psychotherapy. The investigation at hand focuses on paraphilic sexual behavior (e.g., paraphilic masturbatory fantasizing, CSA and CP offenses) and psychologically meaningful factors such as degree of risk awareness, offense-supportive cognitions (e.g., CSA-supportive attitudes, victim empathy deficits), self-efficacy in terms of perceived controllability of sexual urges and self-esteem deficits. Men with and without hormonal treatment were compared, as well as participants undergoing ADT before and after completion of a one-year group therapy program. The present study thus aims at helping professionals to improve clinical practices and treatment strategies in self-identifying, help- seeking pedohebephiles.

Based mostly on clinical experience the following hypotheses was tested: Men taking up ADT would show more pretreatment paraphilic sexual behavior and masturbatory fantasizing compared to men

without hormonal treatment. They were assumed to present more awareness of their risk to offend, less offense- supportive cognitions, and less self-efficacy in terms of perceived controllability of sexual urges. According to the literature, a significant reduction of paraphilic sexual behavior and masturbatory fantasizing in men receiving ADT and psychotherapy was expected. Further, a significant reduction of offense-supportive cognitions and an increase of self-efficacy was assumed. Based on clinical impression, a decrease in self- esteem was anticipated, as men receiving ADT often perceived the need for additional medication as having lost the fight against their sexual fantasies and urges.

Method

Participants

In the outpatient clinic for sexual disorders at the Charité University Clinic 111 men applying for a one-year group therapy program to prevent child sexual offending in the years 2005 to 2010, fulfilling criteria for pedophilia or paraphilia NOS (hebephilia) according to DSM-IV-TR, not being under legal supervision of any kind including prosecution, presenting no additional acute psychiatric disorders, persistent developmental retardation, or substance abuse and not receiving ADT were identified.

Men were 36.8 years of age (SD = 12). Fifty-five (49.5%) had received more than ten years of education and seventy-nine (71.2%) were currently employed. Although sixty men (54.1%) lived with other persons, only thirty-six (34.2%) lived in a relationship at that time. Thirty-eight (34.2%) had children or step-children.

Eighteen (16.2%) participants reported having committed no sexual offense prior to inclusion while thirty-two (28.8%) reported prior CP offenses only, eighteen (16.2%) prior CSA offenses only, and forty-three (38.7%) both offenses. Of the ninety-three men admitting to at least one offense, twenty (18%) reported to have ever been detected for their offending.

Seventy-seven (69.4%) reported sexual fantasies and urges involving prepubescent children. Of these fifty-two (67.5%) were exclusively attracted to prepubescent children, while twenty-two (32.5%) reported at least some attraction to pubescent children or adults. Thirty-six (46.8%) were attracted to boys only, thirty- six (46.8%) to girls and five (6.5%) to both.

Ten men (29.4%) reported sexual fantasies involving pubescent children exclusively, twenty-four (70.6%) reported at least some attraction to adults. Of these thirty-four men, twenty (58.8%) were attracted to girls, ten (29.4%) to boys, and four (11.8%) to both sexes.

Examining the files, fifteen men having taken up ADT at some point of the treatment program were identified, while ninety-six had partaken only in the psychotherapy program. Of the fifteen participants who chose ADT, seven (46.7%) received GnRH analogues, seven (46.7%) received CPA and one man discontinued a testosterone substitution he received for a hypogonadism of unknown origin. The median start of ADT was at thirty-six weeks into the group therapy program (range zero to seventy-three, mean 34.9, SD 18.0) including one man initiating ADT six months after completion of the one-year therapy.

Procedure

The Institutional Review Board of the University Clinic where participants were assessed and treated approved the present study. Participants underwent a psychosexual assessment including a clinical interview and self-report questionnaires for data on socio-demographics, sexual preference, paraphilic interests, psychological factors, criminal history, and paraphilic sexual behavior like CP use and child

sexual offending. According to German law, self-identifying individuals could report past sexual offenses against children under professional discretion without having to fear any legal sanction (for more details on procedure and ethical issues see also Beier et al., 2009; Neutze, Seto, Schaefer, Mundt, & Beier, 2011).

Sexually explicit and non-explicit images of children (SENIC) used for sexual arousal and pastime were categorized as indicative if they depicted fully clothed children or their faces, as nudist & erotic posing if they depicted partially clothed or naked children in a natural manner as well as in provocative poses, as explicit sexual depictions if they emphasized genital areas or showed sexual activities of children without the presence of an adult, as (gross) assault if they depicted children involved in sexual activities with adults, and as sadism & bestiality if the images showed bondage, rape, gang-bang, homicide, physical maltreatment of children or their involvement in some form of sexual behavior with an animal.According to diagnostic criteria of the DSM-IV-TR, pedophilia was diagnosed if recurrent and intense sexual thoughts, fantasies, or urges involving prepubescent children, as well as clinically significant distress or impairment as a result of this sexual interest was reported over a period of at least six months. A history of sexual interactions with children without admission of concomitant sexual thoughts, fantasies, or urges was not considered to be sufficient for the diagnosis of pedophilia. Likewise, hebephilia was diagnosed if the participant reported pubescent children rather than prepubescent children to be the focus of sexual thoughts, fantasies, or urges. Exclusive type of a respective paraphilia was coded, if a person reported recurrent and intense sexual thoughts, fantasies, or urges involving prepubescent or pubescent children only and denied fantasies involving adults. Also, a history of sexual interactions with adults was not considered to be sufficient for the specification of a non-exclusive type of paraphilia. Additional paraphilic interests were coded according to DSM-IV-TR criteria, again focusing on self-reported sexual fantasies rather than sexual behaviors. Sexual gender preference was coded according to the gender of persons that figured predominantly in the participant's sexual fantasies during masturbation, irrespective of age.

Patients applying for treatment were retested prior to treatment, if time interval between first contact and start of treatment had been more than three months. Questionnaire assessment was repeated at the end of the treatment program after approximately one year of group therapy.

In the course of the psychotherapy program all men received a psycho-educational intervention informing them about ADT, its potential benefits, its potential risks and side effects. Participants were given the chance to discuss the costs and benefits of such treatment with the therapists and the other group members. In accordance with international guidelines (Thibaut, Barra, Gordon, Cosyns, & Bradford, 2010) pharmacological treatment was recommended where psychotherapy alone was not sufficient to enhance control of sexual urges or relieve distress caused by sexual urges and fantasies. Men eligible for pharmacological treatment were examined by a medical doctor and informed about the voluntary nature and possible adverse effects of the medication before giving informed consent to the treatment.
Pharmacotherapy was adjusted according to the individual's clinical presentation of distress and risk. Cases deemed less severe were given CPA either 300mg or 600mg biweekly. More severe cases were given GnRH analogues as three months depot. Additional SSRI were given to reduce depressive symptoms or enhance arousal control. The medication was applied in cooperation with an andrological outpatient department, which provided regular medical monitoring according to international guidelines.

Measures

Measures were selected to assess psychologically meaningful factors according to hypotheses. All reliabilities refer to the German translations of the scales administered to a sample of 155 (Neutze et al., 2011) or 291 self-identifying, help-seeking pedohebephilic men contacting our outpatient clinic for

preventive therapy between 2005 and 2010.

Sexual Behavior Involving Minors Scale (SBIMS; Neutze et al., 2011). This eight item scale measures the frequency of the specified sexual behavior within the past six months, rated on a 5-point Likert-type scale ranging from one (never) to five (daily). Three items pertain to CSA (Cronbach's alpha = .65), assessing sexual interactions (e.g., sexual talks, showing pornography, or recording pornographic images of children), sexual activities (e.g., indecent exposure or masturbating in the presence of a child), and sexual contacts with a child (e.g., vaginal, anal, or oral sexual intercourse, fondling or kissing of genitals, or mutual masturbation). Four items pertain to sexual preoccupation in terms of frequency of masturbation to sexual fantasies involving minors (Cronbach's alpha = .72), and one item to CP offending.

High Risk Situations Test (Marques, Day, Nelson, Miner, & West, 1991). This measure evaluates knowledge and awareness of potentially risky situations with regard to sexual offending, with 58 items rated on a 5-point Likert-type scale (Cronbach's α = .97). Individuals with higher scores perceive themselves at higher risk to (re)offend, because they recognize more risky situations they need to avoid or cope with appropriately in order to avoid offending.

Bumby MOLEST Scale (BMS; Bumby, 1996; unpublished German version was obtained by Hoyer and colleagues, 2002, personal communication). This 38-item scale is a measure of maladaptive cognitions and offense-supportive beliefs about children and sex with children, rated on a 4-point Likert-type scale (Cronbach's alpha = .95). Higher scores indicate more offense-supportive attitudes and a greater tendency to justify offending.

Empathy for Children Scale (ECS; Schaefer, & Feelgood, 2006). This 50-item-scale (rated on a 5-point Likert-type scale) is a modified version of the Child Molester Empathy Measure (Fernandez, Marshall, Lightbody & O´Sullivan, 1999) that uses three scenarios to assess both cognitive and emotional empathy of CSA offenders with respect to an "accident victim", a "stranger CSA victim", and the "own CSA victim". For men with no contact victims the latter scenario in the ECS is changed to describe a fantasized child against whom the person sexually offends. The present study did not analyze the "accident victim" vignette and added the scores of the emotional victim empathy and cognitive victim empathy subscales (Cronbach's alpha = .96-.98) separately with higher scores indicating more empathy deficits.

Self-efficacy Scale Related to Minors (SESM; Neutze et al., 2011). This 30-item scale consists of two subscales, Initial Self-Efficacy (Cronbach's alpha = .85) and Coping Self-Efficacy (Cronbach's alpha =.94), rated on a 4-point Likert-type scale and assesses an optimistic sense of controlling ability, which becomes important both before and after a person has worded his intention to control his sexual behavior. By means of this scale, beliefs about one's ability to cope with challenges to control sexual urges regarding children and therewith maintain sexual self-control are assessed. Higher scores indicate greater deficits.

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965; German version: von Collani, & Herzberg, 2003). This 10-item scale consists of two subscales, self-deprecation (Cronbach's alpha =. 87) and self-esteem (Cronbach's alpha =.83). Item-scores were reversed and higher scores indicate deficits in the overall self-esteem scale (Cronbach's alpha =.90).

Results

Group Classification

111 subjects entering the one-year group therapy program were classified into two groups according to their resorting to ADT: fifteen men having taken up ADT and ninety-six men without additional ADT. To

explore effects of hormonal treatment and group therapy on paraphilic sexual behavior and psychological factors, data on pre- and post-treatment assessment was analyzed as paired samples. For these analyses only men receiving a minimum of two doses of either CPA of a GnRH analogue over a period of at least eight weeks were included. This was in accordance with the described maximum effectiveness of ADT after a minimum of eight weeks and to exclude men discontinuing ADT after one single dose. Six subjects meeting these criteria and providing data on post-assessment were identified.

Statistical Analyses

To investigate the characteristics of self-identifying, help-seeking pedohebephiles taking up ADT and its effects on behavioral and psychological factors, a range of non-parametric analyses were conducted. Due to the mainly ordinal scaling of the measures and the small sample sizes, non-parametric statistics were necessary and recommended. Chi-Square statistics, set at the .05 level of significance, were used to compare patients with ADT and without additional drug treatment on sociodemographic, diagnostic, and criminological data. Further, several non-parametric group comparisons were performed on paraphilic sexual behavior and psychological factors to either compare participants with and without additional ADT treatment on the respective variables (Mann-Whitney U-Test set at the .05 level of significance), or to compare pre-post data within the group of patients with additional ADT treatment (Wilcoxon signed-rank tests set at the .05 level of significance). Besides the group level analyses, individual level analyses of change associated with ADT-treatment were conducted. To get more insight in individual changes in psychological factors under therapeutic intervention, analysis of a reliable change were conducted using Jacobson and Truax's (1991) reliable change index (RC) (Jacobson, Follette, & Revenstorf, 1984; Jacobson & Truax, 1991). The formula for calculating the reliable change index was: $RC = (x_{pre} - x_{post}/S_{diff})$ where $x_{pre} - x_{post}$ = pretest score minus post-test score and S_{diff} = the standard error of the difference between the two test scores. The RC translates as a treatment effect size and has a psychometrically sound criterion for clinically significant change. When RC is greater than 1.64, it is very likely (at $p<.05$ for a one- tailed test) that the post-test score is reflecting actual change. Based on RC calculations, each individual's change was classified as improved (i.e. passed the RC criterion but not the cutoff), unchanged (i.e. passed neither criteria), or deteriorated (i.e. passed RC criteria in the worsening direction). All statistical analyses were performed using PASW Statistics 18, Release Version 18.0.0 (© SPSS, Inc., 2009, Chicago, IL, www.spss.com).

Group comparisons of men with and without hormonal treatment before group therapy

Sociodemographic and diagnostic data

Analyses showed no differences between the treatment groups with respect to their sociodemographic data (see table 1). Although not statistically significant, participants with hormonal treatment had more years of education and were more frequently unemployed as compared to men without ADT. With respect to diagnostic data (see table 2), analyses revealed no differences between the groups concerning preferred sexual body age, preferred gender or the exclusiveness of their sexual age preference.

Groups differed with respect to additional paraphilic interests indicated. Participants taking up ADT were more likely to indicate arousability to toucheuristic fantasies. No other differences were found for other paraphilic arousal patterns. Although not statistically significant, the number of men indicating a sexual interest in sadistic activities was nearly twice the number of men taking up ADT than in men without hormonal treatment.

Lifetime Criminal History

Lifetime criminal history and detection status including CP offenses and CSA were assessed in clinical interviews and by self-reports (Table 4).

Comparing their lifetime criminal history, participants with and without ADT did not differ. Similarly, groups did not differ regarding the quantity of men having been detected once in their lives. Nevertheless, somewhat more participants with hormonal treatment were CP (33.3%) and mixed offenders (46.7%) compared to men without ADT. Conversely, men without ADT slightly more often committed either no (16.7%) or CSA offenses only (17.7%).

Paraphilic sexual behavior and psychological factors

For SENIC use, the planned statistical analyses on the prevalence in both, participants with and without hormonal treatment, could not be carried out due to numbers of complete data sets being too small. The main findings were summarized in a descriptive manner (see table 5). Of the men providing complete data on SENIC use, the majority in both groups watched child erotica and about half of them also used child pornographic images for masturbatory purposes. However, except for images depicting clothed (indicative), naked and partially clothed posing children (nudist & erotic posing), relatively more men of the group having taken up ADT indicated using all kinds of SENIC categories. For example, six of nine men having taken up ADT indicated using images depicting sexual activity amongst minors whereas only eleven of thirty-three of the non-ADT group did so. Likewise, the proportions indicating the use of images categorized as “sadism & bestiality” appeared greater in men having taken up ADT than in the non-ADT group.

Men with and without hormonal treatment did not differ with respect to frequency of masturbation involving pedohebephilic fantasies as well as to overt paraphilic sexual acting out involving minors in the past six months (see table 6). Although analyses revealed no significant group differences, participants with hormonal treatment indicated use of sexual fantasies involving minors for masturbation monthly, whereas men without hormonal treatment used such fantasies less than monthly. Both groups accounted for almost no child sexual offenses in the past six months.

Concerning psychological factors, analyses revealed a significant effect of ADT status on coping self efficacy deficits and risk awareness. Men having taken up ADT had perceived themselves prior to treatment less able to control their sexual urges and to be more aware of potentially dangerous situations to sexually offend compared to men not receiving ADT. Examining the participants’ readiness to resort to medical treatment to control sexual urges as assessed with one a single item of the SESM-I, men having taken up ADT expressed more confidence in initially controlling their sexual urges and impulses towards children when routinely taking medication reducing sex drive. No further differences were found, indicating that both men who received and men who did not receive ADT did not radically differ in their value of psychological factors for CSA (see table 6).

Change over treatment in men recurring on ADT

Group comparisons of men with hormonal treatment before and after completion of group therapy

Of the fifteen men taking up ADT, nine men continued the treatment up to the point of this study. These men had been under hormonal treatment for a median of thirty-three months (three to fifty-four, mean 27.9, SD 19.5). Four of these men received CPA, four GnRH analogues, and one discontinued testosterone substitution.

In the six men discontinuing ADT, three had received CPA and three GnRH analogues. Four men discontinued after one single dose, one after two months and one after over a year. Reasons to discontinue ADT were diverse. Three men were discontent with the degree of reduction of sexual experiences. One developed depressive symptoms; one man developed arterial hypertonia. Another participant experienced a first time manifestation of a manic episode during ADT and following a change of his antidepressant medication.

Only six participants could be identified who, having taken up ADT in the course of the program, stayed with ADT for more than one dose and provided data on post-assessment with more than eight weeks of ADT. With this small number, we refrained from group comparisons between men having taken up ADT and men not having done so on post-assessment. A number of measures were available only at pre-treatment testing but not at post-treatment testing due to organisational changes of the treatment program over time.

Therefore, it was decided to examine only the group under ADT in pairwise comparisons and individual change indices. Details of ADT duration and medication are given in table 7.

On average, the men were 31.67 years old, ranging from twenty-one to forty-three years. Four men reported school education of more than ten years and to be employed at the time of first assessment. One man lived in a relationship and was fathering a child, two thirds were living on their own. Five men were pedophiles, whereas one was hebephile. Half of the participants had an exclusive sexual preference, whereas the others were non-exclusive in their preferred sexual body age. Four men preferred females and one man males and one both sexes. Before applying for the project, one man had sexually offended against a child and five were using CP. Of the latter, one CP user had been previously detected.

Analyses revealed that after completion of the program, men reported less cognitive victim empathy deficits and more ability to control sexual urges (Table 8). Further differences over treatment could not be ascertained.

Individual change analyses of men with hormonal treatment before and after group therapy

Unfortunately, missing data on SENIC use at post-assessment did not allow for analyses of SENIC use after therapy.

Subject 1: Subject 1 reported substantially fewer initial self-efficacy deficits in controlling his sexual urges, CSA-supportive attitudes as well as emotional and cognitive empathy deficits after treatment. He indicated more awareness of situations of increased risk to sexually offend against a child, and showed significantly more self-deprecation in a sense of unrealistic self-criticism. Other psychological factors seemed to be unaffected by therapy.

Subject 2. After completing therapy subject 2's self-esteem had deteriorated and aspects of self-deprecation increased. He showed less initial self-efficacy than before treatment. No other significant change was found.

Subject 3. Subject 3 manifested a decrease in CSA-supportive attitudes and in cognitive and emotional empathy deficits. He reported enhanced initial and general self-efficacy to control his sexual urges and a decrease of those situations that were rated to put him at risk to sexually offend against children. No data was available for the RSE. Additional significant changes were not found.

Subject 4. At post-assessment subject 4 reported fewer cognitive empathy deficits and a greater ability to maintain sexual self-control. Nevertheless, he showed more CSA supportive cognitions. No data was available for the RSE, EDCS_emo, SBIMS_MF, SESM_I and HRST and other dynamic risk factors

seemed to be unaffected by therapy.

Subject 5. After completing therapy subject 5 reported less CSA-supportive attitudes. No data was available for the RSE, EDCS_emo, SESM_I and HRST and additional meaningful changes due to therapy could not be revealed.

Subject 6. Subject 6 illustrated a meaningful improvement from therapy in several dimensions of risk. He showed a significant decrease in CSA-supportive attitudes and cognitive empathy deficits. He felt more confident of controlling his sexual urges. Additionally, he showed significantly less sexual preoccupation with deviant masturbatory fantasizing. At pre-assessment subject 6 reported weekly child sexual abusive behavior, conduct which he completely abandoned after therapeutic intervention and hormonal treatment. No data was available for the RSE, EDCS_emo, SESM_I and HRST and additional change on other psychological factors could not be ascertained.

Discussion

Only a small proportion of the sample chose ADT. Discontinuation of ADT was frequent and with approximately half of the sample more often than reported in other contexts. Studies published to date have reported on the effects of ADT on men facing at least some social or legal reprimand. It is possible that some motivation to participate in such study was to gain advantages for pending legal proceedings or to appear in a socially favorable light. The fact that the sample examined in the present study consisted of self- motivated men under no legal supervision may have fostered discontinuation. With the same number of men discontinuing CPA and GnRH treatment, the agent used did not demonstrate an influence on continuation or discontinuation of ADT. In two cases, symptoms that might be attributable to ADT were given as a cause for cessation.

Men resorting to ADT were comparable to men not doing so with respect to socio-demographic and diagnostic data, lifetime criminal history and recent paraphilic sexual behavior. This finding indicates that factors other than the frequency of frequent sexual behaviors influenced the men's decision.

These factors may be seen in the differences found in diagnostic data and psychological dimensions possibly reflecting common dynamics. Men resorting to ADT more often reported arousability to toucheuristic sexual fantasies involving fondling or groping an unsuspecting other. Touching children "unknowingly" has been described as often preceding more intrusive sexual offenses (Hall, & Hall, 2007). Greater arousal to such fantasies thus might indicate a real or perceived risk for an imminent overt sexual offense, reflecting perceived higher intrusiveness of sexual urges. The proportion of men reporting sexual arousability to sadistic fantasies was almost double in men receiving ADT compared to men without hormonal treatment suggesting that patients whose fantasies involve infliction of pain or domination on the victim may experience additional distress of their perceived risk. A markedly higher awareness of high risk situations to sexually offend against children and less perceived self-efficacy in their ability to control sexual urges may have operated in the same direction. Patients may have perceived this accumulation of symptoms as an increased risk to commit overt sexual offenses which may have been a motive to choose ADT. This is in line with samples in other studies composed of men with long-standing paraphilias refractory to other treatment (Roesler, & Witztum, 1998), and with the identified reluctance of sexual offenders to undergo anti-libidinal treatment (Hall, 1995). The patients' clinical presentation might have influenced clinicians' recommendation practice and support for patients' decisions towards ADT. However, this would not explain the patients' greater initial openness to medical treatment enhancing sexual arousal

control. As offense- supportive cognitions did not differentiate groups, there was no evidence indicating an influence on patients' readiness to take up ADT.

In the six men available for analyses of effects over treatment, change in paraphilic sexual behavior as observed within group comparisons was unlike findings of other studies published. As a group, participants who had started ADT in the course of group therapy demonstrated no change in masturbation frequency to paraphilic fantasies and actual child sexual offending behavior after the one-year program. However, as data on paraphilic masturbatory fantasizing and child sexual offending behavior before therapy was almost hitting the bottom end of the distribution, hardly any variance of behavior in the hypothesized direction was possible. Men undergoing ADT showed a decrease in cognitive victim empathy deficits and an increase of perceived self-efficacy to control sexual urges. The increased self-efficacy to control sexual urges has been described in other studies, too (Briken et al., 2001; Schober et al., 2005). A possible explanation for the lack of other significant changes over treatment was identified in great variances in the data decreasing the possibility of locating current effects.

Descriptive analyses of individual change over treatment revealed a different picture than within group comparisons. In line with previous results, five out of six participants reported less offense-supportive cognitions. However, not only cognitive, but also emotional empathy deficits and CSA-supportive attitudes were reduced over treatment. All participants providing data on the measure of self-esteem showed decreased levels after completing the program. This result is in line with the stated hypotheses and clinical impression, that men starting ADT would lose self-confidence. Three participants provided data on the HRST. One showed significantly more and one reported less awareness of situations putting them at risk to sexually offend against children. Though opposed, both findings may be interpreted as an improvement in terms of a reduced risk to sexually offend. On the one hand, increased awareness of possibly dangerous situations may lead to greater precaution. A decrease of situations seen as potentially at risk for sexual offending might reflect the perceived increase in self-efficacy to control sexual urges.

Overall, the decision to take up ADT appeared to be associated with a pronounced wish to control sexual urges. Analyses of individual change under ADT and psychotherapy revealed improvement in psychological and behavioral factors.

Limitations

One major limitation of the study is the retrospective observational design. Being uncontrolled by definition, observational studies are prone to produce results influenced by confounding variables, e.g. therapist variables. Differences found in between group comparisons remained undetermined whether reflecting the individual's motivation or a factor interacting with the therapists' course of actions leading to begin ADT. The program yielding the data analyzed was not explicitly laid out, neither to describe eligibility for ADT nor potential effects of such treatment. There was a great variability in the time lap between the assessment of behaviors and psychological dimensions and the start of ADT in our sample. Individual development between initial testing and the beginning of ADT could not be taken into account in this study, and data representing the moment of taking up ADT is missing. The changes in paraphilic behaviors and psychological factors thus represented the overall change over the course of the treatment program and effects of ADT are not able to be discerned from effects of the psychosocial treatment program. Whether post-treatment results compared to the moment of taking up ADT showed an improvement or deterioration could not be ascertained.

This research relies exclusively on self-reports. A systematic assessment of physiological and psychophysiological measures would have provided additional data to control for both, social desirability and differential responding to ADT. This leaves uncertainty as to the extent to which changes could be related to ADT.

The sample available for the description of treatment effects was too small to consider the sampling distribution as normal. This made it necessary to conduct non-parametric tests, which tend to be less sensitive at detecting an effect of the independent variable on the dependent variable meaningful group differences in the present study. To disclose any given effect at a specified significance level, a larger sample is required for the non-parametric test than the parametric test.

Future Directions

The results presented in this study have to be regarded as tentative. More detailed studies on ADT in self-motivated, help-seeking pedohebephiles are needed. The data presented in this study might help tailor future research on how to motivate self-identifying pedohebephiles for ADT and on factors influencing compliance. Future studies in self-motivated pedohebephiles should involve a prospective design, matched controls or even randomized group allocation, and also include systematic data on endocrinological changes, psychological and behavioral effects, and side effects of ADT. Detailed research comparing combined psychotherapy and ADT with psychotherapy or ADT only on psychologically meaningful factors and paraphilic sexual behavior such as the undetected use of CP and undetected CSA would help provide clinicians with more reliable data on effects and effectiveness of those treatment options.

Conclusions

This study presents first data on self-motivated, help-seeking pedohebephiles choosing ADT in the course of a psychotherapy program to prevent child sexual victimization under the circumstance of not facing any legal pressure.

In the population studied, greater awareness of potentially risky situations to commit CSA and perceived inability to control sexual urges posed as factors influencing the decision for ADT. Factors leading to discontinuation were diverse. In the present study both the intended and the adverse effects of the medication seemed to influence compliance. These findings underline the clinical importance of careful education and monitoring of patients interested in ADT concerning the potential effects and side effects.

Data on individual change suggest decreased paraphilic sexual behavior and offense-supportive cognitions, increased risk-awareness and self-efficacy, and a loss of self-esteem under combined psychotherapy and ADT. The effect size of ADT in self-motivated, help-seeking pedohebephiles remains unclear due to the aforementioned limitations. The clinical use of ADT in self-identifying pedohebephiles thus needs further study.

Although further research will be necessary, the present study might help to direct the future clinical use of ADT in self-identified pedohebephiles.

Tables

Table 1: Group comparison on sociodemographic data by received ADT (N = 111).

	ADT				
	With ADT (n = 15)		Without ADT (n = 96)		
	M	SD	M	SD	Z [a] (1)
Sociodemographic data					
Age	33.07	13.09	37.36	11.78	- 0.84
	n (%)		n (%)		χ^2 [b] (1)
Education (> 10 years)	9	(60.0)	46	(47.9)	0.76
Employed	8	(53.3)	71	(74.0)	2.69 [b]
Relationship status	4	(26.7)	34	(35.4)	0.51
Solitarily	8	(53.3)	43	(44.8)	0.38
Fatherhood	5	(33.3)	33	(34.4)	0.01

Note. [a] Mann-Whitney U-Tests; Z-values are significant at * p < .05 and ** p < .01 (asymptotic significances; 2-tailed).

[b] significance of Fisher´s exact test is given if expected frequencies count less than 5, * *p* < .05 and ** *p* < .01

Table 2: Group comparison on diagnostic data by received ADT (N = 111).

	ADT					
	With ADT (n = 15)		Without ADT (n = 96)			
	n (%)		n (%)		df	χ^2 a
Diagnostic data						
Sexual preference					1	0.13 a
Pedophilia	11	(73.3)	66	(68.8)		
Hebephilia	4	(26.7)	30	(31.3)	Exclusiveness of diagnosis	
Exclusive type	9	(60.0)	53	(55.2)	1	0.12
Sexual orientation					2	0.08 a
Heterosexual	8	(53.3)	48	(50.0)		
Homosexual	6	(40.0)	40	(41.7)		
Bisexual	1	(6.7)	8	(8.3)		

Note. * $p < .05$ and ** $p < .0$,

[a] significance of Fisher´s exact test is given if expected frequencies count less than 5,

Table 3: Group comparison on additional paraphilic interest by received ADT (N = 111).

	Hormonal therapy				
	With ADT (n = 15) [a]		Without ADT (n = 96) [b]		χ^2 [c] (1)
	n (%)		n (%)		
Additional paraphilic interest					
Fetishism	2	(13.3)	20	(21.1)	0.48
Transvestic fetishism	1	(6.7)	9	(9.5)	0.12
Sexual masochism	4	(26.7)	18	(19.1)	0.45
Sexual sadism	9	(60.0)	35	(36.8)	2.90
Voyeurism	9	(60.0)	53	(55.8)	0.93
Exhibitionism	3	(20.0)	12	(12.6)	0.60
Frotteurism	2	(13.3)	13	(13.7)	0.00
Toucheurism	6	(75.0)	14	(32.6)	5.10*

Note. * $p < .05$ and ** $p < .01$

[a] size of subsample ranges from eight to fifteen subjects

[b] size of subsample ranges from fourty-three to ninety-six subjects

[c] significance of Fisher´s exact test is given if expected frequencies count less than

Table 4: Group comparisons on lifetime criminal history by received ADT (N = 111).

	ADT					
	With ADT (n = 15)		Without ADT (n = 96)		df	χ^2
	n (%)		n (%)			
Lifetime offense history (%)					3	1.47 [a]
No offenses	2	(13.3)	16	(16.7)		
CP offenses only	5	(33.3)	27	(28.1)		
CSA offenses only	1	(6.7)	17	(17.7)		
Mixed offenses	7	(46.7)	36	(37.5)		
Detection status (%)						
Detection once	4	(26.7)	16	(16.7)	1	0.88 [a]
CP offense	2	(13.3)	10	(10.4)	1	0.11 [a]
CSA offense	2	(13.3)	5	(5.2)	1	1.45 [a]

Note. * $p < .05$ and ** $p < .01$

[a] significance of Fisher´s exact test is given if expected frequencies count less than 5

Table 5: Proportions of men using SENIC by received ADT (N = 111).

	ADT			
	With ADT (n = 15)		Without ADT (n = 96)	
	Yes (n)	No (n)	Yes (n)	No (n)
SENIC typology				
Indicative	1	4	6	6
Nudist & erotic posing	3	1	17	4
Explicit sexual depiction	5	2	15	10
Explicit erotic posing	4	3	15	15
Sexual activity	6	3	11	22
(Gross) assault	6	3	17	16
Sadism & bestiality	5	6	13	43
Use of child pornography & child erotica				
Child erotica	5	1	18	4
Child pornography	7	3	24	12

Table 6: Group comparison on paraphilic sexual behavior and psychological factors by received ADT (N=111).

	ADT				
	With ADT		Without ADT		
	M (SD)	n	M (SD)	n	Z^a
Paraphilic sexual behavior					
Paraphilic masturbatory fantasizing	2.67 (0.99)	15	2.47 (1.00)	86	-0.62
Sexual behavior involving minors	1.29 (0.59)	15	1.07 (0.28)	86	-1.58
Psychological factors					
Risk awareness	114.60 (30.89)	15	94.94 (39.02)	87	-2.45*
CSA-supportive attitudes	73.0 (14.82)	15	72.0 (20.58)	89	-0.51
Cognitive victim empathy deficits	82.60 (36.54)	15	74.26 (33.36)	84	-.952
Emotional victim empathy deficits	52.13 (19.91)	15	49.05 (21.59)	84	-.644
General coping self-efficacy deficits	46.73 (13.82)	15	39.01 (14.33)	85	-2.09*
Enduring control of sexual urges with the aid of medications	2.07 (0.92)	14	2.28 (1.13)	81	-0.57
Initial coping self-efficacy deficits	17.93 (4.75)	15	19.27 (5.89)	86	-0.70
Immediate sexual impulse control due to medication	2.00 (0.88)	14	2.65 (1.09)	82	**-2.07***
Self-esteem deficits overall	25.60 (7.98)	10	28.53 (6.82)	75	-1.06
Self-esteem deficits	13.30 (3.95)	10	14.88 (2.96)	75	-1.20
Self-deprecation	12.30 (4.62)	10	13.65(4.39)	75	-8.40

Note. [a] Mann-Whitney U-Tests; Z-values are significant at * p < .05 and ** p < .01 (asymptotic significances; 2-tailed).

Table 7: ADT duration and medication at post assessment.

	Duration	Medication
Subject 1	36	CPA 300 mg
Subject 2	19	GnRH Analogue
Subject 3	39	Discontinued T-Substitution
Subject 4	20	GnRH Analogue (Triptorelin)
Subject 5	8	CPA 300 mg
Subject 6	48	GnRH Analogue (Triptorelin)

Table 8: Group comparison on paraphilic sexual behavior and psychological factors before and after one-year group therapy in participants with ADT (N=6).

	Participants with ADT				
	Before therapy		After therapy		
	M (SD)	n	M (SD)	n	Z^a
Paraphilic sexual behavior					
Paraphilic masturbatory fantasizing	2.58 (0.83)	6	2.58 (0.44)	6	-0.74
Sexual behavior involving minors	1.33 (0.82)	6	1.06 (0.14)	6	-0.45
Psychological factors					
Risk awareness	106.00 (26.86)	6	100.33 (24.99)	3	0.00
CSA-supportive attitudes	78.50 (15.54)	6	69.83 (4.45)	6	-1.58
Cognitive victim empathy deficits	86.33 (39.31)	6	69.50 (30.36)	6	-2.20*
Emotional victim empathy deficits	56.50 (23.64)	6	34.33 (14.50)	3	-1.60
General coping self-efficacy deficits	45.00 (9.01)	6	35.83 (4.71)	6	-2.21*
Initial coping self-efficacy deficits	18.00 (3.52)	6	15.33 (3.21)	3	-0.82
Self-esteem deficits overall	22.00 (8.49)	2	30.00 (8.49)	2	-1.41
Self-esteem deficits	12.50 (3.54)	2	15.50 (3.54)	2	-1.41
Self-deprecation	9.50 (4.95)	2	14.50 (4.95)	2	-1.41

Note. [a] Wilcoxon-Tests; Z-values are significant at * $p < .05$ and ** $p < .01$ (asymptotic significances; 2 - tailed).

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