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ORIGINAL INVESTIGATION

Which factors influence the appropriateness of testosterone-lowering medications for sex offenders? A survey among clinicians from German forensic-psychiatric institutions

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Abstract

Objectives. Although testosterone-lowering medications (TLM) are a frequently used addition to psychotherapy in sex offender treatment, discord still seems to exist amongst clinicians as to in which cases administering TLM is justified. The depo-Provera scale (DPS), which was published by Maletzky and Field (Aggress Violent Behav 2003;8:391), assesses the appropriateness of TLM administration in sex offender treatment. *Methods*. The DPS was sent to all forensic psychiatric institutions in Germany. The clinical directors of these institutions were asked to rate the importance of each item of the DPS on a six-point Likert scale. *Results.* Twenty-nine clinicians participated. The most important reason selected for the prescription of TLM for sex offender treatment was a "history of sexual offender treatment failure". The least important item was "deviant sexual interest, by plethysmograph or Abel Screen" (neither plethysmograph nor Abel Screen is used in Germany). *Conclusions.* Clinicians' attitudes towards the DPS correspond to the suggestions made in the current WSFBF-guidelines for the pharmacological treatment of sex offenders (Thibaut et al. 2010; World J Biol Psychiatry 11:604–655). Use of the DPS could therefore contribute to a more structured approach towards helping clinicians come to a decision about whether or not to treat a sex offender with TLM.

Key words: *sex offender, cyproterone acetate, gonadotropin-releasing hormone agonist, depo-Provera, sex offender treatment*

Introduction

Testosterone-lowering medications (TLM) are a frequently used addition to psychotherapy in the treatment of sex offenders (Rösler and Witztum 2000; Jordan et al. 2011). The current guidelines for the biological treatment of paraphilias, published by the World Federation of Societies of Biological Psychiatry (WFSBP), suggest applying TLM together with psychotherapy in patients with severe paraphilias or sexual sadistic fantasies and behaviour as well as in patients with a high risk of recidivism regarding sexual offences (Thibaut et al. 2010). Two testosterone-lowering agents are used in Germany and many other European countries on a regular basis in sex offender treatment: cyproterone acetate (CPA; Androcur®[1]) and triptorelin (Salvacyl®[2]), a gonadotropin-releasing hormone agonist (GnRH agonist). In the United States, medroxyprogesterone acetate (MPA; Depo-Provera®[3]) and leuprolide acetate (Leupron®[4]) are used instead of CPA and triptorelin. CPA acts as a testosterone antagonist and binds to the androgen receptors of for example the testes or different brain areas, thus inhibiting the physiological effects of testosterone and its metabolites by directly blocking testosterone receptors (Bradford

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and Pawlak 1993a; Jordan et al. 2011). Different studies have found that CPA treatment in sex offenders leads to a decrease in sexual interest, sexual fantasies and sexual desire, and to a lower frequency of masturbation and sexual intercourse (Cooper and Cernovovsky 1992; Bradford and Pawlak 1993b; Guay 2009). GnRH agonists lead to a decline in serum testosterone concentrations by permanently stimulating GnRH receptors in the hypothalamus. This leads to a subsequent desensitization of these receptors and a decline in the production of LH and FSH (Jordan et al. 2011; Saleem et al. 2011). GnRH agonist treatment reduces sexual interest and sexual desire and leads to reduced sperm concentrations (Rösler and Witztum 1998; Safarinejad 2008). Furthermore, first results indicate that a paedophile patient could show a reduced neuronal responsiveness to visual sexual stimuli after being treated with a GnRH agonist (Schiffer et al. 2009). Based on the current state of research, it can be cautiously suggested that GnRH agonists appear to be more potent than CPA in reducing serum testosterone concentrations (Briken et al. 2003). Nevertheless, CPA and GnRH-agonist treatment are usually accompanied by a variety of side-effects, ranging from hot flushes, weight gain and lethargy, to more severe side-effects such as thromboembolia, gynaecomastia and a loss of bone mineral density leading ultimately to osteoporosis (Bradford 2001; Grasswick and Bradford 2003; Hoogeveen and Van der Veer 2008; Gooren 2011; Jordan et al. 2011). Moreover, many sex offenders are not willing to be treated with TLM, and compliance regarding the taking of the medication once treatment has started would appear to be rather low (Fedoroff 1995; Langevin et al. 1988). However, treatment compliance can be increased markedly if the offender is informed comprehensively about the possible risks and side effects of the medication and if he has the feeling that he can decide freely about taking the medication and can withdraw from treatment at any time (Fedoroff 2011). In this context, about 78% of sex offenders in forensic-psychiatric institutions in Germany are asked for their written informed consent prior to TLM treatment and 72% are explicitly informed about possible risks and side effects before TLM treatment is started (Turner et al. 2013). Nevertheless, in light of the side effects and occasional low patient compliance it is especially important for clinicians to determine which sex offenders are suitable for TLM treatment in order to ensure ethical appropriateness. It is therefore not surprising that despite the existing guidelines German clinicians seem to be using different algorithms when deciding whether a sex offender should be treated with TLM, since TLM treatment is only applied in about 50% of German forensic-psychiatric institutions (Turner et al. 2013). Furthermore, the number of patients being treated with TLM at different institutions varies markedly across Germany, and it can be assumed that the patients alone do not account for these differences (Turner et al. 2013).

The depo-Provera scale (DPS) was developed by Maletzky and Field (2003) in order to support the decision as to whether a sex offender should be treated with TLM after he is released from prison. The DPS consists of 13 items and measures the appropriateness of TLM treatment for sex offenders. Maletzky and Field (2003) proposed that in particular those sex offenders with a high risk should be considered for TLM treatment. The items of the DPS are based on clinical research and experience with patients receiving TLM. Items assessing nonsexual variables (e.g., antisocial attitudes and behavior, and vocational and relationship history) were not included in the DPS (Maletzky 1991; Emory et al. 1992; Prentky 1997; Maletzky and Field 2003). Table I provides an overview of the items and scoring of the DPS (Maletzky and Field 2003). Maletzky et al. (2006) recommended that any offender with three or more factors, with two or more starred factors, or with a score exceeding 6 should be seriously considered for TLM treatment. In this context some of the starred items were found to be of particular importance when evaluating whether an offender has a high risk of reoffending and would thus be an appropriate candidate for TLM treatment (Maletzky 1991; Hanson and Bussière 1998; Seto et al. 1999; Seto and Lalumière 2001; Hanson and Morton-Bourgon 2005).

The present study aimed at evaluating the importance of the different items of the DPS from a

Table I. Depo-Provera Scale.

Item	Score
1. Multiple victims	1
2. Multiple paraphilias	1
3. Preferential/obligatory deviant sexuality – by official or offender history*	1
4. Deviant sexual interest, by plethysmograph or Abel Screen*	2
5. Not living with victim(s)	1
6. Use of force in sexual crime(s)	1
7. Any male victim(s)*	2
8. Age under 30 at time of projected release	1
9. CNS dysfunction (developmental disability, CNS injury, etc.)*	2
10. History of psychiatric illness	1
11. Sexual violations while under community supervision	1
12. Sexual violations in an institution	1
13. History of sexual offender treatment failure(s)	2

clinical perspective. The results provide an impression of whether the factors suggested are closely linked to the decision-making process in clinical routine, and whether they should be taken into account by treating clinicians when making a decision about using TLM.

Methods

In Germany, convicted offenders can be mandated to serve their sentence either in the correctional system or in the forensic-psychiatric system. Psychotherapeutic and pharmacological treatment is more commonly used in the forensic-psychiatric system (Turner et al. 2013). In order for an offender to be placed in a forensic-psychiatric hospital a judge must decide that because of a mental disorder the offender is not legally responsible or has a severely diminished legal responsibility for his actions and thus poses a risk to society, whereby further offences can be expected after the offender is released. The most prevalent disorders leading to the decision to place an offender in a forensic-psychiatric hospital are schizophrenic psychoses, severe personality disorders, or severe sexual deviancies and mental retardation (Stolpmann 2010). Furthermore, offenders suffering from alcohol or drug addiction problems can be placed in a forensic-psychiatric hospital. Of all offenders being placed in the forensic-psychiatric system, about 25% are sex offenders (Müller-Isberner and Eucker 2009). In contrast, of all offenders being mandated to serve their sentence in the correctional system, only about 7% are sex offenders (Statistisches Bundesamt 2012). Those sex offenders suffering from a mental disorder who have committed minor offenses not leading to imprisonment and those with a high risk who have been released on probation are commonly treated psychotherapeutically and/or pharmacotherapeutically in a forensic-psychiatric outpatient clinic (Turner et al. 2013). While the court can decide that a sex offender should receive psychotherapy, pharmacological treatment can only be given if the offender consents. However, it should be kept in mind that from an ethical point of view therapy of any kind can only be successful in the long-term if the offender consents and is willing to actively participate in the assigned form of treatment. Therefore, patients in the forensic-psychiatric system in particular are regularly encouraged to reflect on their current form of treatment and their personal treatment progress and are informed about additional treatment options. This procedure helps the offenders to opt in cooperation with the therapists for the most appropriate kind of therapy.

Measures

A self-constructed questionnaire was used to assess aspects of the prescription of TLM for sex offenders in Germany and was sent to all forensic psychiatric institutions. The questionnaire was to be answered by the medical or psychological directors of the institutions. In the last part of the questionnaire the clinicians were asked about their attitudes towards the items in the DPS in light of their importance for the decision as to whether a patient should be treated with TLM (Maletzky and Field 2003; Maletzky et al. 2006). Every item was to be rated on a six-point Likert scale (1 = not important at all; 2 = unimportant; 3 = more or less unimportant; 4 = more or less important; 5 = important; 6 = very important).

Other results from this survey concerning the frequency of the use of TLM have been published elsewhere (Turner et al. 2013).

Participants

The questionnaire was sent out to all 69 forensic psychiatric hospitals and outpatient clinics in Germany. At the end of the data collection process 50 out of the 69 institutions contacted had replied to the request for study participation, of which 29 (20 forensic-psychiatric hospitals, four forensic outpatient clinics and five forensic-psychiatric hospitals with an outpatient clinic) were willing to participate and consequently answered the relevant part of the questionnaire. Reasons for non-participation were a lack of time ($n = 12$), data protection regulations ($n = 4$), the hospital or clinic's own thematically similar studies ($n = 1$), no incarcerated sex offenders ($n = 1$), and no reasons stated ($n = 3$). The institutions that participated treated 584 sex offenders (range: 12–65 sex offenders per institution) of whom 96 (16.4%) received a TLM (Turner et al. 2013). TLM were currently being used in 17 (58.6%) institutions. The mean age of the professionals who responded was 48.4 years (SD = 4.8); 21 were male and eight female. All forensic psychiatric clinicians were medical doctors and all were Heads of a forensic psychiatric hospital or outpatient clinic in Germany.

The local ethics committee has given its approval to the study, and written informed consent was given by every study participant.

Statistical analysis and outcome measures

Data evaluation was conducted using the Statistical Package for the Social Sciences (SPSS 17.0 for Windows, SPSS Inc., Chicago, IL, USA). The

median rating and the answering range of the participating clinicians were determined for every item. The mean score of every item was evaluated as well as the relative number of clinicians who rated an item as either important or very important. In addition, the answers of those clinicians who were currently using TLM were compared with the answers of those clinicians not currently using TLM. The answers of the female clinicians were compared with those of the male clinicians. Differences between the groups were analysed using *t*-tests for independent samples.

Results

Table II shows that the most important item leading to the decision to treat a patient with TLM was item 13 "History of sexual offender treatment failure" (Median = 6; Range = 4–6), which was rated as either very important or important by 96.6% of the clinicians. The second most important item was item 11 "Sexual violations while under community supervision" (Median = 6; Range = 4–6), which was rated as either very important or important by 82.8% of the clinicians.

The least important items were item 10 "History of psychiatric illness" (Median = 3; Range = 1–6), which was rated as either very important or important by 13.8% of the clinicians, and item 4 "Deviant sexual interest, by plethysmograph or Abel screen" (Median = 3; Range = 1–6), which was rated as either very important or important by 10.6% of the clinicians.

No significant differences emerged when comparing the answers of those clinicians in whose institutions TLM were currently being used to treat sex offenders with the answers of those clinicians at whose institutions TLM were not currently in use. A comparison of the female and male clinicians' answers revealed that the male clinicians rated more items as being more important than did the female clinicians, with the exception of item 2 "Multiple paraphilias" and item 3 "Preferential/obligatory deviant sexuality" (Table III). Nevertheless, significantly higher values could only be found for the male clinicians with regard to item 9 "CNS dysfunction", item 11 "Sexual violations while under community supervision", and item 12 "Sexual violations in an institution".

Discussion

The present study evaluated the importance of the items in Maletzky and Field's (2003) DPS for clinical decision-making on an individual case level with regard to whether TLM are an appropriate treatment option for a sex offender. The results suggest that all 13 items of the DPS are important in the opinion of the participating clinicians, since the lowest median rating was 3 (items 4, 10). This indicates that half of those clinicians who responded viewed these items as being at least more or less important. This finding suggests that clinicians apparently take a great amount of varied information into consideration before starting TLM treatment.

The clinicians rated item 13 ("History of sexual offender treatment failure") as being the most important factor concerning the decision as to whether or not TLM should be considered for sex offender treatment, since 28 of the 29 clinicians rated this item as being either very important or important. Although previous research has confirmed that past treatment failures are significantly related to sexual recidivism, there are other factors

Table II. Attitudes towards the items of the DPS arranged according to their importance for the decision whether to treat a sex offender with TLM.

Item	Median	Range	M	SD	Percentage of clinicians that rated the item as either very important or important
History of sexual offender treatment failure(s)	6	4–6	5.7	0.6	96.6%
Sexual violations while under community supervision	6	4–6	5.4	0.8	82.8%
Sexual violations in an institution	5	3–6	5.1	0.9	72.4%
Use of force in sexual crime(s)	5	2–6	4.6	1.3	65.5%
Preferential/obligatory deviant sexuality – by official or offender history	5	2–6	4.6	1.3	58.6%
CNS dysfunction (developmental disability, CNS injury, etc.)	5	2–6	4.3	1.3	58.6%
Not living with victim(s)	5	1–6	4.3	1.5	55.1%
Any male victim(s)	5	1–6	4.3	1.4	51.7%
Multiple paraphilias	4	2–6	4.1	1.5	44.8%
Age under 30 at time of projected release	4	2–6	4.1	1.3	41.3%
Multiple victims	4	2–6	3.9	1.2	34.5%
History of psychiatric illness	3	1–6	3.2	1.3	13.8%
Deviant sexual interest, by plethysmograph or Abel Screen	3	1–6	2.9	1.4	10.3%

Table III. Attitudes towards the items of the DPS according to gender.

Item	Female ($n = 8$)		Male ($n = 21$)			
	M	SD	M	SD	T	*P*
History of sexual offender treatment failure(s)	5.63	0.74	5.67	0.48	0.178	0.860
Sexual violations while under community supervision	4.88	0.83	5.57	0.68	2.326	0.028
Sexual violations in an institution	4.25	1.04	5.43	0.75	3.414	0.002
Use of force in sexual crime(s)	3.88	1.46	4.90	1.14	2.019	0.054
Preferential/obligatory deviant sexuality – by official or offender history	5.00	1.41	4.43	1.25	−1.064	0.297
CNS dysfunction (developmental disability, CNS injury, etc.)	3.50	1.42	4.67	1.20	2.234	0.034
Not living with victim(s)	4.13	1.55	4.43	1.43	0.498	0.622
Any male victim(s)	4.25	1.67	4.33	1.32	0.142	0.888
Multiple paraphilias	4.38	1.60	4.05	1.43	−0.534	0.598
Age under 30 at time of projected release	3.63	1.30	4.33	1.28	1.327	0.196
Multiple victims	3.75	0.89	3.90	1.30	0.309	0.760
History of psychiatric illness	3.00	0.93	3.71	1.27	1.444	0.160
Deviant sexual interest, by plethysmograph or Abel Screen	2.88	1.35	3.43	1.40	0.979	0.336

more strongly correlated with recidivism, such as sexual deviance or preoccupation and antisocial behaviour (Hanson and Bussière 1998). At first glance, the finding that item 13 was rated as the most important item seems unexpected. However, it seems likely that past treatment failures, sexual deviance and preoccupation, and antisocial behaviour are highly correlated. The current guidelines of the WFSBP recommend using TLM for those sex offenders for whom psychotherapy alone did not lead to satisfying results (Thibaut et al. 2010). Seen from this standpoint, it makes sense that past treatment failures are an important factor in deciding whether to administer this medication with its potential side effects, while weighing up the risks and benefits. Item 11 ("Sexual violations while under community supervision") and item 12 ("Sexual violations in an institution") were rated as either important or very important by more than 70% of the clinicians. It is obvious that offenders who recidivate while still being in inpatient or outpatient treatment can be classified as posing a high risk. Furthermore, items asking about violations while under supervision have also been included in other well-established risk assessment instruments – e.g., Violence Risk Appraisal Guide (VRAG; Harris et al. 1993) or STABLE-2007 (Hanson et al. 2007) – making clear their importance for identifying those offenders who are especially high-risk and are thus appropriate candidates for TLM treatment (Maletzky and Field, 2003). Item 4 ("Deviant sexual interest, by plethysmograph or Abel Screen") was viewed as the least important item. While this result may be a surprise to clinicians and researchers from the USA, Canada or the UK, it can be explained by the fact that in German forensic psychiatric institutions the plethysmograph or Abel Screen is not used on a regular basis. Nevertheless, deviant sexual interests were found to be a meaningful predictor for recidivism (Hanson and Morton-Bourgon 2005) and, moreover, the current WFSBP guidelines suggest using TLM in sex offenders with severe paraphilias (Thibaut et al. 2010). However, previous studies have also shown that having male victims (item 7) or multiple victims (item 1) is closely related to deviant sexual interests or, more precisely, paedophilic interests (Freund and Watson 1991; Seto et al. 1999; Seto and Lalumière 2001). Since these items are easier to assess, the question arises as to whether they might be being applied implicitly by clinicians when assessing sexual deviancies and were therefore rated as more important in comparison to item 4. This suggestion is also supported by the finding that item 3 "Preferential/obligatory deviant sexuality – by official or offender history" was rated as either important or very important by almost 60% of the clinicians, showing that they are well aware of the fact that deviant sexuality is one of the most important risk factors. Previous studies also found that sex offenders with male victims are more likely to be treated with TLM as compared to offenders with female victims (Maletzky et al. 2006).

Maletzky and Field (2003) described item 9 ("CNS dysfunction") as being of particular importance for assessing the appropriateness of TLM application. This suggestion could not, however, be confirmed completely by the present study since the clinicians in the study assigned more importance to other items. This finding seems more comprehensible when considering that CNS dysfunctions, or more specifically developmental disabilities or brain damage, were shown not to be predictive of sexual recidivism (Hanson and Bussière 1998). Moreover, the question has to be raised as to whether this item should really be given particular importance. Previous studies have

however also identified that it are those offenders with CNS dysfunctions or developmental disabilities who especially profit from TLM treatment, since psychotherapeutic treatment is more likely to fail in these cases (Maletzky 1991, 1993). Interestingly, male clinicians rated this item as being more important than the female clinicians did.

Although in the meantime more validated risk assessment instruments are available, the DPS is still the only scale that assesses risk in the context of whether it is appropriate for a sex offender to be treated with TLM. Based on the present results and under the premise of also applying the cut-off scores suggested by Maletzky et al. (2006) in Germany, the authors would suggest providing some factors with more weight and others with less: in this context, sexual violations committed while under institutional or community supervision seem to be of particular importance to the clinicians, and could thus be scored with two points or could be marked as starred items. On the other hand, CNS dysfunctions were rated as less important, and additionally, research could not find a significant relationship to the rate of sexual recidivism (Hanson and Bussière 1998). However, since it was suggested that it is in particular those sex offenders with CNS dysfunctions who seem to profit from TLM treatment, this item should either be scored with one point or should not be classified as a starred item. Furthermore, for Germany and all other countries not using a plethysmograph or Abel screen to assess deviant sexuality, item 4 should be left out during the scoring process.

The results of the present study are limited by the fact that only German clinicians were included. Given the differing legal prerequisites concerning sex offender treatment, one has to be cautious when generalizing the results for other countries. Furthermore, reasons for not prescribing TLM were not assessed systematically, although no significant differences in responses emerged between those clinicians currently prescribing TLM and those not currently prescribing it. Nevertheless, future research should compare the attitudes and the decision-making process of clinicians in relation to their years of experience or their success rate in order to identify the most promising strategies.

Since previous research has shown that sex offenders who requested TLM treatment but did not receive it have a significantly higher rate of recidivism (Maletzky et al. 2006), future research should assess the attitudes of clinicians towards these individuals in order to identify the factors that prevent clinicians from prescribing TLM. One reason for not prescribing TLM could be the costs of the medication. Although the cost of TLM treatment in Germany is usually covered by the recipient's health insurance or the justice system, information about the financing of TLM treatment at the individual institutions was not assessed. This question should be addressed in future studies. Furthermore, qualitative studies could address the question as to whether clinicians do in fact effectively act on their convictions concerning treatment in clinical practice, as reflected in their rating of the factors in this investigation, or whether they are influenced by other factors when deciding on the appropriateness of TLM treatment, e.g., their subjective clinical impression or intuition.

In clinical routine, the decision to apply TLM treatment is usually made by the treating clinician based on his or her personal experience and attitude and should always be made in cooperation with the patient being treated. Nevertheless, clinical guidelines suggest other treatment algorithms for supporting the clinician's final decision about a certain treatment method. Furthermore, ethical appropriateness should be determined before starting treatment. Previous research has shown that in German forensic psychiatric institutions written informed consent is not being obtained in every case before starting TLM treatment and not all sex offenders are being informed about the possible risks and side effects of TLM treatment (Turner et al. 2013). This raises the question as to whether ethical principles are always being considered to an appropriate extent. Moreover, treatment compliance could probably be increased in those patients who are currently not being extensively informed about the treatment (Fedoroff 2011). The present study provides an insight into the factors that clinicians view as important for the process of deciding whether or not a sex offender should be treated with TLM. It has shown that in many cases the clinician's attitude towards the importance of different offender-specific characteristics is in line with the suggestions of the current WFSBP guidelines (e.g., the particular importance of former treatment failures or inappropriate behavior while still under supervision) and with the current state of research. It can thus be suggested that the use of the DPS together with such risk assessment instruments as Static-99 (Hanson and Thornton 1999) or STABLE-2007 (Hanson et al. 2007) as well as with the clinical guidelines could constitute a more structured process of decision-making with regard to the question whether a sex offender should be treated with TLM. This could be the basis for an approach that could overcome the discord that still exists between clinicians concerning the use of TLM in sex offender treatment, and thereby ensure the clinical and ethical appropriateness of TLM use on an individual case level.

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Statement of Interest

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