Behavioral and Psychopharmacological Treatment of the Paraphilic and Hypersexual Disorders

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In this article, the second of a two-part series, the authors present information on the clinical assessment of individuals with paraphilias and hypersexual disorders. They review ethical considerations in the assessment and treatment of individuals with paraphilias. The role of interview and subjective and objective instruments in the assessment of individuals with paraphilias and hypersexual disorders is discussed. The authors discuss the use of penile plethysmography or phallometry, polygraphy, and viewing time assessments. Risk assessment of sexual offenders is reviewed. The authors then discuss behavioral, environmental, and psychopharmacological treatments for paraphilias and hypersexual disorders. Cognitive-behavioral therapy appears to be the most effective nonpharmacological strategy. The authors describe cognitive-behavioral techniques for decreasing and/or controlling sexual urges (e.g., satiation, covert sensitization, fading, cognitive restructuring, victim empathy therapy) as well as methods for enhancing appropriate sexual interest and arousal (e.g., social skills training, assertiveness skills training, sex education, couples therapy). The authors also discuss the role of relapse prevention therapy and 12-step programs, as well as other nonbiological therapies such as surveillance networks. The importance of providing appropriate treatment for comorbid conditions (e.g., depression, substance abuse or dependence) is stressed. The authors then review psychopharmacological treatments, including serotonin reuptake inhibitors (SRIs) and antiandrogens, in particular, the use of gonadotropin-releasing hormone (GNRH) agonists. SRIs have been studied in these disorders in an uncontrolled way and appear promising. Earlier antiandrogens (e.g., estrogen, progesterone, and cyproterone acetate) have demonstrated efficacy in the treatment of paraphilias. The newer GNRH agonists have the advantage over the earlier treatments of being available in long-acting depot formulations and having fewer side effects. Preliminary studies and case reports with these agents appear promising. Further study of both the SRIs and GNRH agonists in these disorders is needed. The article concludes with a treatment algorithm, in which the authors suggest beginning with less restrictive treatments (e.g., behavioral or verbal therapies), if possible, and moving to more restrictive alternatives (e.g., biological therapies, institutionalization) as needed. A guide for clinicians and patients about where and how to find appropriate clinicians and treatment resources in the United States is provided. *(Journal of Psychiatric Practice* **2002;8:21–32**)

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As discussed in the first article in this two-part series, the paraphilic and hypersexual disorders are prevalent, constitute a significant source of distress for individuals and society, and they share many features. Individuals who present with paraphilic or hypersexual behaviors pose a set of challenging problems for the clinician. These include limitations in objective assessment instruments, negative emotional reactions on the part of the clinician, and most clinicians' lack of specialized training in specific treatments for sex offenders.

Treatments for these two types of disorders, however, have not to date been similar. There is substantial research on the behavioral and psychopharmacological treatment of individuals with paraphilias; many of these treatments have been mandated by courts as part of a legal sentence. Individuals with hypersexual disorders, however, are usually not involved with the legal system and often their behavior does not result in a criminal

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offense, but rather in subjective distress or distress to spouses or partners. Some treatments for both hypersexual and paraphilic disorders have been adapted from those used in the treatment of substance abusers, including relapse prevention therapy[1] and the use of 12-step programs.[2] Generally speaking, the use of 12-step programs has been more prevalent for individuals with hypersexual disorders. However, given the similarities in the phenomenology of both of these disorders, treatments used for one may have relevance for the other.

ASSESSMENT

Ethical Considerations

The main organization for professionals involved in the treatment of individuals who have paraphilias is the Association for the Treatment of Sexual Abusers (ATSA), which has issued guidelines entitled *Ethical Standards and Principles for the Management of Sexual Abusers*[3] that give procedures for assessing and treating sexual offenders. Informed consent is an important issue. Prior to any assessment, individuals should be informed of the specifics of the evaluation and the risks thereof, including exposure to sexual materials which they might find objectionable, or that may result in depression or anxiety, as well as the purpose of the evaluation and the limits of confidentiality. In all cases, patients should be advised of the requirement for mandated reporting should the client identify a child who is currently being abused or at risk of being abused. Specific requirements vary from state to state and the clinician should become familiar with the local state laws. If an individual has been arrested and is facing legal charges, it is advisable for the person to have an attorney before the evaluation is begun.

Interview and Clinical Assessment

In order to insure effective individualized treatment, it is imperative that the clinician conduct a comprehensive assessment. This should begin with a detailed sexual history of both paraphilic and nonparaphilic behaviors and fantasies from childhood to the present. It is essential that the interviewer appear to be nonjudgmental and comfortable in talking about sexual behaviors. Paraphiliacs and individuals with hypersexual disorders are often poor historians, with substantial motivation to withhold information and to be secretive. In addition, prior to treatment, they often minimize their problems and rationalize their behavior through cognitive distortions that support their particular atypical behaviors.

The presence of legal authority can also have a substantial impact on the amount of information individuals will give in a clinical interview,[4] decreasing it dramatically. Whenever possible, it is important to try and obtain collateral information for both paraphiliacs and hypersexual individuals. For individuals who have been charged with a crime or convicted of one, there will often be substantial amounts of written information in the form of charges, victim's statements, and arrest reports, which the interviewer should have in hand to be able to go over point by point with the offender. For individuals with hypersexual behavior, it is often important to have a spouse or partner available to give relevant history.

Because the majority of individuals who present with atypical sexual behavior problems are under external pressure to seek treatment by partners or the judicial system and may be resistant to treatment, it is important for the clinician to assess whether the client is cooperative, honest, self-disclosing, remorseful, and willing to assume responsibility for his or her actions. Often, because of reluctance to relinquish behavior which is extremely pleasurable and/or shame in discussing intimate details, information provided to the clinician and compliance with treatment is minimal. The clinician should assess both the client's internal level of motivation as well as determine what external motivators exist, such as a partner, spouse, family, employer, or court mandate.[5]

With respect to an interview style, we prefer to ask individuals being assessed how often they have engaged in a behavior, or how often they masturbate, rather than asking them a question that could be answered with a "yes" or "no." Given the opportunity to deny atypical behavior, almost all patients will do so. We then proceed with detailed questions regarding each paraphilia, the age of onset and number of fantasies and/or acts over the person's lifetime, and ask the individual to place a mark on a line representing 0% control to 100% control over their atypical sexual behavior, to indicate where they feel their degree of control might lie.[6] A particularly useful way of assessing individuals' sexual interests is to ask them what the content of their masturbatory fantasy has been over the past 5 to 10 instances of masturbation.

Subjective Instruments

A large array of psychological tests and other paper and pencil tests have been devised to inquire into an individual's normative and atypical sexual history.[7, 8] Readers

are referred to Prentky and Edmunds for a summary and discussion of these tools.[9] Bancroft et al.[10] describe a Likert scale for rating sexual interest and sexual activity over the past week, which we have found useful. Kafka[11, 12] has described using an individual's rating of his or her total sexual outlet for both conventional and unconventional sexual behaviors over the week prior to an assessment. Derogatis[7, 13, 14] has validated and published scales that assess a number of aspects and attitudes concerning conventional sexual functioning.

Carnes[15] has described a Sexual Addiction Screening Test that he has used to assess this population; it consists of a series of 25 questions that elicit information about how much of a problem an individual has had controlling his or her problematic sexual behaviors and how pervasive they have become in his or her life. Coleman et al.[16] reported on a preliminary study designed to empirically validate a 28-item scale to assess compulsive sexual behavior.

Objective Instruments

Three types of objective measurements have been used in the assessment and treatment of paraphiliacs: penile plethysmography, polygraphy, and visual or viewing time. Each of these measurements has advantages and limitations. In evaluating hypersexual disorders, what is usually problematic is not arousal to a particular atypical sexual stimulus, but rather the compulsivity and/or frequency with which an individual is aroused to what otherwise would be acceptable objects or activities of sexual interest; thus the objective instruments described here have not to date been widely studied or used with this population.

Penile plethysmography or phallometry. This technique involves direct measurement of a patient's erection response while he is presented with a variety of sexual stimuli, consisting of audiotaped descriptions, slides, or videotapes depicting specific paraphilic targets or behaviors. Plethysmography appears to be the best available measure of atypical sexual arousal in male sex offenders at this time.[17, 18] Both circumferential and volumetric measurements have been used. For circumferential measurements, the patient applies a transducer that measures the degree of penile tumescence while he sits in privacy in a laboratory and a technician in another room presents stimuli and records his degree of responsiveness to the various stimuli. For volumetric measurements, which are much less frequently used, but much more sensitive, a technician must assist the patient in the placement of a rigid device which is fitted over the penis with an airtight seal at the base of the penis, and stimuli are then presented.

While plethysmography has been the most widely used objective technique, it has substantial limitations. Many individuals "flat-line" or fail to show any response to any stimuli, presumably because of anxiety, although this depends on the laboratory and the ability of the plethysmographic technician to put the patient at ease. Some individuals are able to fake their responses.[19, 20] A major problem that currently exists in the United States is the lack of any standardized and accepted stimulus sets. ATSA has made a set of audiotapes, but visual stimuli sets are more sensitive and would be useful to have. A number of Canadian groups have standardized and used sets of images for phallometric assessment; unfortunately, most of these contain sexually explicit images of minors and transportation of these materials to the United States or use of them in the United States would violate laws against child pornography. The inability to use stimulus sets that have already been validated has impaired the study of individuals with paraphilias in the United States. Another problem with plethysmography is the lack of standards governing its use. Howes[21] reported on a survey of North American plethysmographic assessment centers and found great inconsistency in the plethysmographic procedures and data interpretation being used. We understand that several Canadian researchers, aware of these issues, have embarked on the creation of a set of stimuli that will be acceptable for usage in the United States and validated (personal communication, James Brown, Limestone Technologies, Odessa, Ontario).

Several studies have demonstrated that the degree of measured sexual arousal (measured by plethysmography) is one of the best predictors of recidivism in child molesters.[22, 23, 24]

One should be cautioned not to use plethysmography as a means of establishing guilt or innocence; this procedure should be used only for risk assessment or to guide treatment (as pre- and post-treatment outcome measures to assess treatment effects). We are not aware of any research involving the use of plethysmography with individuals with hypersexual disorders.

Polygraphy. Polygraphy has been found to be useful in the management of sexual offenders, and we have also encountered its use in hypersexual disorders. Although its use in court to determine guilt or innocence is problematic,[25] polygraphy has nevertheless emerged as a tool for following sex offenders on parole or probation.[26, 27]

Typically, a baseline would be established, against which a re-examination could be done at subsequent intervals of 6 months or a year to explore the occurrence of any problematic behavior since the last examination.

Viewing time assessment. Viewing time assessment has also found a place in the assessment of sexual offenders. Originally described in 1942 by Rosenzweig,[28] it has been studied by various groups[29, 30] and, although not as developed as plethysmography, holds promise for assessing patterns of sexual interest.[29, 31] It involves showing individuals slides depicting various sexual targets, while recording the length of time that these individuals view a particular set of slides,[29] and also asking individuals to rate the sexual attractiveness of the various stimuli.

Risk Assessment

Prior to beginning treatment, clinicians should always first assess dangerousness and risk of reoffense. In other instances, such as in proceedings involving commitment of sexual offenders under sexual predator statutes or consideration of releasing an individual from prison, clinicians may be asked to perform a risk assessment. There are a variety of actuarial instruments that have been developed for this purpose.[22, 24, 32, 33] These instruments are still in the process of validation. They generally involve consideration of so-called "static" risk factors, which include items such as age or the number of prior arrests which are not mutable or changeable by treatment, and "dynamic" risk factors, which would include the presence of a positive social environment or the development of empathy, which are subject to change with treatment or by the offender. Some authors have discussed the limitations of such predictive efforts,[33, 34] but, as a matter of actual practice, mental health professionals who work with these populations are called upon daily to make such assessments. Not much has been written about risk of relapse or formalized assessment of relapse risk in individuals with hypersexual disorders; some professionals have expressed the opinion that recovery for the "sex addict" takes longer than for individuals with drug dependence and that lapses in "sex addicts" have more severe consequences.[2]

COGNITIVE-BEHAVIORAL TREATMENT

The Safer-Society Program has conducted periodic surveys of sex offender treatment in the United States, most recently in 2000, and has consistently reported that most programs employ cognitive-behavioral treatment as their main treatment modality, and that most of these programs also report using a wide variety of nonbehavioral treatments in addition to cognitive-behavioral treatment.[35–41] ATSA[3] indicates that cognitive-behavioral therapy appears to be the most effective therapy at this time. The major components of cognitive-behavioral therapy for the paraphilias are described below.

Methods of Decreasing and/or Controlling Sexual Urges

Satiation. A variety of methods have been used to help individuals suppress sexual urges and control atypical behaviors. One of these, satiation, teaches the individual to satiate himself with the atypical stimuli that arouse him.[42–46] These methods have been reviewed by Marshall et al.[47] and Laws and Marshall.[48] By repeating the fantasy in a prescribed, repetitive manner, arousal to the atypical fantasy is reduced or the fantasy actually becomes aversive. Both verbal and masturbatory satiation are used; individuals are taught to perform this exercise in private and are asked to make a record of their verbalizations and fantasies for presentation to and discussion with their therapist.

Covert sensitization. Covert sensitization is another cognitive-behavioral technique that is used to disrupt the chain of behaviors and thoughts antecedent to the offending behavior. This is done by having the individual verbalize and associate negative consequences with the precursors of his or her atypical sexual behavior.[42, 49] As with satiation, this treatment is conducted by the patient in private and tape-recorded and entered into a log for later review by the patient's therapist. McConaghy et al.[50] reported on the successful use of covert sensitization or imaginal desensitization in the treatment of 20 individuals complaining of sexually compulsive behavior.

Fading. Fading is a technique used to help individuals shift their sexual fantasies from atypical to acceptable and is described by Abel and Osborn.[51] It has the goal of altering sexual fantasy and arousal towards more acceptable activity. The patient is asked to fantasize (with or without masturbation) about atypical sexual stimuli and then gradually fade the fantasy to one of acceptable sexual activity.

Cognitive restructuring. Most individuals who engage in atypical sexual behaviors have developed permission-giving statements and hold irrational beliefs regarding

their behavior. These are cognitive distortions, which help them to justify and maintain their atypical sexual behavior. Examples are beliefs that women enjoy being raped or that children enjoy sexual acts with adults. In therapy, these cognitions are challenged by the therapist[42, 52] or in a group situation.

Victim empathy therapy. Very often paraphiliacs have little understanding of the impact of their behavior on victims and little sensitivity to victim's feelings.[53] An important part of therapy involves victim empathy training, to help patients develop an understanding of the negative consequences of their behavior and to develop sensitivity towards victims.[47, 54] This would presumably serve to inhibit an individual from engaging in paraphilic behavior.

Aversive stimulation. Another form of behavioral therapy used with this population is aversive stimulation, in order to suppress deviant sexual arousal.[55] The most widely used of these techniques is olfactory aversion.[56] This therapy is administered by the patient and pairs noxious odors, such as spirits of ammonia, with the patient's deviant fantasy. This paring interrupts the fantasy and results in suppression of the behavior.

Other methods. Abel and Osborn[51] discuss a variety of other behavioral techniques, including imaginal desensitization, in which the patient is taught to reduce anomalous sexual urges using imagery,[50] aversive behavioral rehearsal, in which the patient enacts his deviant behavior before an audience who provides feedback,[57] and electrical aversion, in which the patient receives a shock when responding to deviant stimuli.[58] However, some clinicians find such techniques objectionable.[5]

Methods of Enhancing Appropriate Sexual Interest and Arousal

These techniques are not geared specifically to enhancing appropriate sexual arousal but rather to helping patients learn how to initiate and maintain appropriate sexual relationships.

Social skills training. Many offenders have been shown to lack appropriate social skills.[59] Social skills training helps the offender learn and practice socially appropriate interactions through modeling, rehearsal, role playing, and receiving social feedback from group members.[42]

Assertiveness skills training. Patients who have deficits in assertiveness often act aggressively or passively instead of in an assertive manner. Assertiveness skills training involves offering exercises and practice at becoming assertive, similar to the social skills training noted above.[42, 60]

Sex education and treatment of sexual dysfunction. Patients are often greatly lacking in knowledge of sexual practices and risks of sexual behavior, and providing accurate information is often another component of treatment.[35, 39, 42, 44]

Couples therapy. Members of couples in which one of the pair has a paraphilia or is a sexual offender often present with sexual dysfunction. Couples in which one member of the couple presents with hypersexual behavior usually have chronic sexual dysfunction as well. Manley[61] describes several stages of therapy for couples with this problem, including assessing the likelihood of relapse into addictive patterns, then healing of wounds, and finally attempts to improve the couple's sexual experience. Ross[62] discusses couples treatment in this population which consists of creating an abundant support system (including 12-step groups), identifying triggers, using abstinence contracts, and using a sponsor as a guide. Schneider discusses family therapy[63] with this population.

RELAPSE PREVENTION THERAPY

Originally used in the field of substance abuse, relapse prevention therapy helps the individual identify factors that may be important in triggering a relapse.[47, 64–66] The patient identifies high-risk situations, identifies behavioral chains of antecedents leading up to the problematic behavior, and develops strategies to avoid sexual acting out. The three components of this type of therapy are risk recognition, coping effectively with urges, and developing strategies and responses to limit relapse.[67, 68]

TWELVE-STEP PROGRAMS

Twelve step programs are a major aspect of care for individuals with substance abuse and/or dependence problems[69–72] and have found their way into use for a variety of other disorders, including compulsive gambling[73] and overeating.[74, 75] In the past decade, there has been a proliferation of self-help groups for the hypersexual disorders, including Sexaholics Anonymous (SA), Sex Addicts Anonymous (SAA), Sex and Love Addicts Anonymous

(SLAA), and Sexual Compulsive Anonymous (SCA). These groups are not led by professionals, but rather by peers. The content and process of these groups and their meetings are modeled after 12-step programs for substance abusers.[2, 76] We are aware of no studies of efficacy or treatment outcome in individuals involved with these groups, as there are for substance abuse groups.[71] Generally these groups have been used by individuals involved with hypersexual, but not illegal, behavior, although many of our paraphilic patients and sex offenders have reported significant benefit from attending these meetings. They would seem to merit further study for individuals with paraphilias, inasmuch as they are free, supportive, and widespread, and some authors have suggested this as a treatment for paraphiliacs.[77, 78] It should be clear, however, that the development and utilization of such twelve-step groups for hypersexual behavior is relatively recent and does not yet have the position that such groups would have in the treatment of individuals with substance abuse or dependence problems.

It should also be noted that generally speaking, for individuals convicted of sexual offenses, legal authorities, such as departments of probation or parole, while they would accept some documentation from secretaries of Alcoholics Anonymous (AA) meetings, for instance, as satisfying conditions of mandated attendance of 12-step meetings, will not do this for individuals convicted of sexual crimes, but rather will insist on that individual's participation in a professionally run group. This limits the ability of 12-step groups to satisfy conditions of treatment for individuals on probation or parole.

OTHER NONBIOLOGICAL THERAPIES

Surveillance Networks

Often, family members, if involved in treatment and willing, are asked to monitor and help the individual in treatment. For instance, wives or mothers of an individual with pedophilia might be asked to report any known contacts with children to the therapist; or they might be asked to report any unexplained absences or unaccounted-for time, such as at the beginning or end of the day, when an exhibitionist might be active or an individual might be known to have visited prostitutes previously. For professionals involved in sexual misconduct, office staff or patients may be asked to complete forms that either ask specifically about inappropriate behaviors (for staff to complete) or have questions imbedded that might suggest that a physician is acting inappropriately (for patients to complete).[79]

Other Therapies

Obviously, when comorbid disorders are identified, as discussed in the first article in this series, appropriate treatment should be offered, such as substance abuse treatment, psychopharmacological and therapeutic treatment for mood and other Axis I disorders, and appropriate treatment for personality disorders.

PHARMACOLOGICAL TREATMENT

Serotonin Reuptake Inhibitors (SRIs)

There have been several recent reviews of medications used in the treatment of the paraphilias[80–82] and of the hypersexual disorders.[83] Generally, studies involving antidepressants have involved open-label treatment of individuals with either of these types of disorders. Greenberg and Bradford[84] identified 25 such studies of SRI antidepressants prior to 1997 consisting of case reports or small open-label series. Most of these studies report efficacy in the range of a 50%–90% response rate.[85–87] Some of the methodological problems with these existing studies have been reviewed by Rösler and Witztum;[82] it is notable that there is a lack of well-controlled and well-designed studies examining the efficacy of SRI medications in these populations. In the one published study that involved a double-blind crossover comparison of desipramine and chlorimipramine, only 8 of 16 subjects completed the trial and the results were not statistically significant.[88] Generally speaking, dosages of such medication have been comparable to those utilized for depression or obsessive-compulsive disorder. We are not aware of any studies that have examined dose-response characteristics of these medications for these disorders. Side effects, particularly sexual ones, can result in significant compliance issues; in our experience patients have been more willing to tolerate sexual side effects given that hypersexuality is a target symptom and with the explanation that the presence of such side effects may decrease with time as their body accommodates to the effects of the medication.

A variety of agents have been used in the treatment of these disorders, including fluoxetine, fluvoxamine, clomipramine, buspirone, and lithium carbonate.[80] Kafka and Hennen[89] reported the successful use of psychostimulant augmentation in this population of patients.

The efficacy of SRI antidepressants makes clinical sense for a variety of reasons, including the higher incidence of depression and anxiety disorders in this population, the efficacy of these agents against obsessive-compulsive dis-

order, and their sexual side effects, which include decreased sexual interest, problems with achieving ejaculation or orgasm, and erectile difficulties.[90–93]

Antiandrogens

The use of antiandrogen treatment has been reviewed by Bradford,[81,94] Gijs and Gorren,[80] and Rösler and Witzum.[82] It has been extremely difficult to study these agents in paraphiliac populations because of the high rate of side effects, poor patient motivation, and high drop-out rates.[95]

The most promising current agents are gonadotropin-releasing hormone (GNRH) analogues.[96] Since the isolation and chemical characterization of GNRH in 1971, several analogues have been created through substitutions in the decapeptide structure,[96, 97] which result in enhanced potency and a prolonged duration of action compared to naturally-occurring GNRH. The continuous administration of these long-acting GNRH analogues in depot preparations leads eventually to desensitization and down-regulation of GNRH receptors on the pituitary gonadotropes (the pituitary cells which produce luteinising hormone [LH] and follicle-stimulation hormone [FSH]) with a decrease in LH and FSH secretion; however, there is a transient increase in LH and FSH secretion for a matter of days to weeks with the initial stimulation of the GNRH analogues until, as the gonadotropes become desensitized to GNRH, an inhibition of their secretion occurs. In males, LH acts on testicular Leydig cells to stimulate synthesis of androgens, mainly testosterone; thus, parallel with the serum LH levels, there is an initial increase in testosterone and then a decrease to castrate levels. Some clinicians have used antiandrogens, including the steroidal antiandrogen, cyproterone acetate[98, 99, 100] or the nonsteroidal antiandrogen, flutamide,[101] for 2 to 4 weeks to counteract any presumed increase in sexual drive which might be related to this testosterone surge, but others[102] have not. Clinicians should be mindful of the possibility of an increase in sex drive in the first 2 to 4 weeks of GNRH therapy.[103] Cyproterone acetate is not available for use in the United States, so that closer observation, warning regarding the possibility of increased sexual drive, or the use of additional antiandrogens[104] are options to consider. The GNRH analogues have the advantage over earlier hormonal treatments of being able to be administered in depot formulation every month or 3 months and of having markedly fewer side effects than other treatments used for these disorders.[105] These agents have achieved widespread use in medicine for the treatment of prostatic cancer, endometriosis, and premature adolescence.[97, 106]

Support for the effects of these agents on sexual interest and behavior comes from reports of the effects of castration (and thus the lowering of testosterone) on sex offenders in various countries,[107–110] from studies demonstrating reduced sexual interest in men receiving GNRH analogues for prostatic cancer,[111] and from studies of earlier antiandrogens, including estrogen, progesterone, and cyproterone acetate.[80, 112] Six placebo-controlled studies of these earlier antiandrogen hormones established that hormonal treatment had an effect, producing a decrease in the frequency and intensity of sexual desire as well as a decrease in subjective sexual arousal.[10, 95, 113–116] Two studies showed no effect of hormonal intervention, but neither of these had a placebo control or period without treatment as validation.[117, 118]

There are now four case series concerning the use of GNRH agonists for the treatment of the paraphilias and hypersexual disorders,[98–102] each involving uncontrolled open-label treatment and each demonstrating a positive effect. In the largest series,[102] 30 men were treated with triptoreloin (a GNRH agonist not available in the United States) and supportive psychotherapy for 8–42 months. All of the men had a statistically significant reduction in the number of sexually deviant fantasies and desires from a mean before therapy of 48 ± 10 to 0 and a decrease in the number of incidents of abnormal sexual behavior from 5 ± 2 per month to 0. The main side effects of these agents include erectile failure and hot flashes.[102] Mood disorders have also been reported with GNRH agonist treatment;[98, 101, 119, 120] GNRH-induced depression appears to respond well to treatment with sertraline.[101, 121]

Osteopenia and osteoporosis have been found in men with prostatic cancer treated with GNRH analogues[122, 123] and appear to be related to the lack of testosterone.[124–126] Osteopenia has also been reported in paraphiliacs treated with GNRH agonists.[101, 102] Osteopenia has been managed in this population with periodic bone density evaluations,[101] the administration of calcium and vitamin D,[82] small doses of testosterone,[82] or the administration of alendronate.[127] Add-back therapy of estrogens or progesterone in females treated with GNRH therapy for endometriosis has been shown to prevent bone loss.[128, 129] Osteopenia is clearly emerging as a potentially serious side effect to be prevented. Other hypogonadal side effects of GNRH treatment are reversible with cessation of treatment. Overall, however, these agents clearly hold promise in the treatment of both paraphiliac and hypersexual disorders and merit further study.

Prior to the administration of LHRH analogues, it is our practice to have the patient have a complete physical examination, with, if there are any medical issues, an

opinion by the patient's attending physician that there are no contraindications to the use of LHRH analogues. At baseline we obtain a complete set of chemistries, urine analysis, EKG, LH, FSH, and testosterone (T), and a bone density evaluation. We prophylactally prescribe alendronate 70 mg po once per week to prevent osteopenia; obviously, if osteopenia were to appear or worsen in spite of this therapy, appropriate consultation and action should be taken. We redraw T, FSH, and LH at 1 and 2 months after inception of therapy and then repeat these measures, including a bone density evaluation, every 6 months. If we were to use depot-leuprolide acetate, we would start with a month-long depot injection of 7.5 mg and then continue with monthly or tri-monthly (22.5 mgs) dosages. Obviously, other GNRH analogues could be used where available, and the *Physician's Desk Reference* should be consulted for appropriate information and dosing. The possibility of an increased sexual drive in the first 2–4 weeks after inception of GNRH therapy should be dealt with as discussed above.

TREATMENT OUTCOME

There have been many studies of treatment outcome of therapeutic efforts with sex offenders,[22, 130, 131] which are beyond the scope of this article to review in detail. Generally speaking, among nonbiological methods, cognitive-behavioral treatment has been demonstrated to be effective.[132, 133] Treatment outcome also varies according to the specific population studied. We are aware of no organized prospective studies that have examined the efficacy of 12-step programs, of dynamic psychotherapeutic approaches, or of the other modalities mentioned above for these populations. Hanson[134] has discussed methods of evaluating the efficacy of treatment programs for sex offenders.

SUGGESTED TREATMENT ALGORITHM

Generally speaking, we would suggest starting with less restrictive treatments if possible, which would involve behavioral or verbal therapies, and moving to more restrictive alternatives involving biological therapies. Often patients whom we evaluate will have tried nonbiological therapies to no avail or will prefer to try a medication initially, and we have no objection to this. ATSA has suggested group therapy and cognitive-behavioral therapy as being the most effective strategies for individuals who are sexual abusers. Twelve-step programs and/or psychotherapy have been suggested for hypersexual individuals. Psychopharmacological treatment has been shown to have efficacy, although the studies supporting the efficacy of antiandrogen therapy are much more extensive. However, the decision as to which therapy or combination of therapies to use initially and at what point to use them has to rely on a thorough clinical evaluation and assessment of risk. Individuals who are out of control may require pharmacological treatment with antiandrogens initially or institutionalization. In all cases of medication administration, recent literature should be consulted, informed consent administered, and patients should be informed that psychopharmacological treatment is for an off-label indication. Generally speaking, for sex offenders who are on antiandrogen or other medications, we have also recommended concomitant continuation of appropriate sex-offender specific therapy, including cognitive-behavioral, relapse-prevention, or other treatment that might be indicated.

ADOLESCENTS WITH SEXUAL BEHAVIOR PROBLEMS

Adolescents who engage in inappropriate sexual behavior present a population with special needs. These adolescents are a heterogeneous group and should be assessed using an individualized approach.[135] Often these adolescents are treated as adult offenders and mislabeled as pedophiles.[136] Guidelines for the assessment and treatment of this population have been described by a number of authorities.[137–140]

SUMMARY AND CONCLUSIONS

The paraphilias and hypersexual disorders have many features in common and both are amenable to similar methods of assessment and treatment. A detailed clinical interview, with attention to both the heterogeneities of the individual and to the wide variety of psychiatric disorders found in these populations and with an emphasis on the individual's sexual life, is paramount. Subjective inventories and objective methods of assessment of sexual interest and arousal can be useful in assessing both types of disorders, although their use in the United States is hampered by a lack of standardized and available stimuli.

A variety of cognitive-behavioral treatments have been used, mostly in the treatment of the paraphilias but which also hold promise in the treatment of the hypersexual disorders. Likewise, 12-step programs used for the hypersexual disorders could also offer benefit to individuals with paraphilias. Outcome studies have not been conducted on 12-step programs for hypersexual individuals and could be useful. Treatment of adolescents with

sexual behavior problems who may go on to develop paraphilias offers the potential of preventing future victimization.

Psychopharmacologically, a variety of agents have been tried for both disorders. SRI agents have been studied in these populations in an uncontrolled fashion. Earlier controlled studies of antiandrogens, including estrogen, progesterone, and cyproterone acetate, have demonstrated the efficacy of this treatment modality. The LHRH agonists have considerable advantages over earlier antiandrogens, including a more favorable side-effect profile and the capacity to use long-acting injections, and hold great promise. Methodologically sound studies of both of these types of agents are needed.

Editor's note: A resources guide for clinicians and patients is provided on pp. 59–60.

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