compliance or frequently missed appointments. Some affective clues are shyness (victims of abuse do not usually express anger well), fright, embarrassment, evasiveness, anxiousness, passivity, and crying. Common psychiatric disorders are anxiety, depression, panic disorder, and posttraumatic stress disorder. There may also be factitious or self-induced disorders. Of note, spousal violence is the strongest predictor of alcoholism in women, but the converse is not true.

Physical examination may reveal bruises on the head, neck, chest, abdomen (especially during pregnancy), breasts, and upper extremities. The patient may also have bruises in various stages of healing. Injuries may not be consistent with the patient's explanation. However, there may be no visible signs of injury.

Forming a plan

Victims often request analgesics, but habituating substances should be avoided if possible: these help maintain the cycle of violence and provide an opportunity for chemical dependency or suicidal gestures. The patient's emotional status needs to be evaluated, as does the risk to the patient (and her children). The patient should be referred to appropriate community agencies and given information on local shelters and hotlines. She needs to develop a follow-up plan ("safe plan" or "exit plan"); however, do not expect her to make all of her plans while in the office.

The patient herself must establish the goals of intervention. Most women do not necessarily want the relationship to end; they want the abuse to stop. Beware of establishing separation as your goal: separation may increase violence. Marriage counseling, however, is usually not appropriate in the acute setting, as such counseling generally assumes both partners have equal power in the relationship, and may perpetuate the false belief that the abuse will stop if the woman works harder on the relationship.

WHAT ABOUT THE ABUSER?

Abusers typically have strong, controlling personalities and cannot tolerate autonomy in their partners. They are rigid and have low tolerance for stress; they also have low self-esteem, feelings of inadequacy, and a sense of helplessness. In general, abusers refuse to take responsibility for their behavior. They may be charming and manipulative outside the marriage. They often make unrealistic demands on their partners and often exhibit contempt for women in daily activities. Two thirds abuse alcohol, but many episodes of violent behavior occur when the abuser is sober, even if he has an alcohol problem.

Treatment of the abuser is directed at helping him understand that violence and controlling behavior is an inappropriate way to express himself and solve problems. Legal action is often necessary to get batterers into therapy. Therapy usually takes at least 6 months in specialized programs. The abuser must be violence-free for 2 to 3 years before marriage counseling is safe or appropriate. It is important not to bolster a woman's hope that her abuser will change: even the most successful programs take a long time and have only a 40% to 60% success rate for those who complete them.

CONCLUSIONS

Partner abuse is a common, serious, and potentially treatable problem that is frequently overlooked in medical practice. Greater awareness, nonjudgmental questioning, and support on the part of primary care physicians can go a long way toward helping battered women change their lives and improve their physical and emotional health.

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EXERCISE AND HYPERTENSION: COMMON QUESTIONS

IN PERSONS with hypertension, the benefits of regular aerobic exercise far outweigh the risks. As more people with hypertension take up exercise, they will have questions about it for their physicians. Surprisingly little information exists

about some aspects of this topic, but we are able to offer some tentative advice and conclusions.

WHAT IS AN ABNORMAL RESPONSE TO EXERCISE?

In normotensive subjects, systolic blood pressure increases approximately 40 mm Hg during maximum aerobic exercise, while diastolic blood pressure remains stable or decreases slightly. Persons with hypertension have a similar increase in systolic blood pressure (starting at higher level), but also have an increase in diastolic blood pressure of 6 to 8 mm Hg. Further, systemic vascular resistance starts at a higher level and decreases less during exercise in persons with hypertension than in normotensive subjects. Persons with hypertension also have 16% to 30% less exercise capacity, because their stroke volume, heart rate, and cardiac output do not increase as much.[1]

Does antihypertensive treatment abolish the abnormal response?

In persons with hypertension, the abnormal response to exercise may persist even if the blood pressure is normal at rest, and even if they undergo exercise training. In a study in patients with hypertension undergoing treatment with medication, the mean baseline resting blood pressure was 138/88 mm Hg. During exercise this increased to 218/107 mm Hg.[2] In another study, although exercise training lowered peak blood pressure during exercise by 19/10 mm Hg, the blood pressure still rose to 199/98 mm Hg during exercise despite normal resting blood pressure.[3]

Does the abnormal response predict hypertension?

Persons who are normotensive at rest who have a hypertensive response to exercise have a risk of subsequently becoming hypertensive two to three times higher than do persons with a normal response. However, the sensitivity of an abnormal response in predicting hypertension is low. In three studies, 52% to 62% of normotensive persons who had such a response became hypertensive within 3.5 to 5.6 years; the sensitivity of the test was 16% to 60%, and the specificity was 53% to 95%.[4]

DOES EXERCISE PREVENT HYPERTENSION?

Several large longitudinal studies showed that a sedentary lifestyle is a risk factor for developing hypertension, although being obese or having parents with hypertension carried a greater risk.[5,6] Other studies showed that increasing one's fitness level decreases the probability of developing hypertension.[7]

Regular exercise lowers systolic blood pressure by approximately 10 mm Hg and diastolic blood pressure by 7 mm Hg. In reported studies, the reduction in blood pressure did not correlate with the intensity of exercise and was independent of weight reduction, sodium restriction, or age. The higher the initial blood pressure, the greater the reduction.[8]

IS EXERCISE SAFE FOR HYPERTENSIVE PATIENTS?

Of the potential complications of exercise, sudden cardiac death is the most worrisome, but the absolute risk is very small: among normotensive persons, one sudden death might occur during 396 000 hours of jogging, 26 000 hours of cross-country skiing, or 50 000 hours of rugby.[9] On the other hand, regular aerobic exercise decreases overall cardiovascular risk.[10] The most common cause of sudden cardiac death during exercise in young persons (ie, younger than age 30) is hypertrophic cardiomyopathy, whereas the most common cause in older persons is coronary artery disease.

Is exercise testing necessary?

Exercise testing is not usually necessary to "clear" patients for exercise—a clinical evaluation by itself suffices in most patients. The history should address significant coronary artery disease, syncope or near syncope (due to hypertrophic cardiomyopathy, valvular heart disease, arrhythmias), premature coronary artery disease or sudden cardiac death in family members, or conditions that might limit exercise capability. The physical examination should include the blood pressure and the cardiovascular and musculoskeletal systems. A resting electrocardiogram is recommended for all hypertensive patients, whether or not they intend to begin an exercise program.

Although the American Heart Association recommends exercise testing for sedentary patients older than 40 years who wish to initiate aerobic exercise and for younger patients with coronary risk factors,[11] such an approach would not be cost-effective or practical, as most positive test results would be false-positive. I recommend that only selected patients undergo testing, on the basis of the physician's prudent judgment and the patient's wishes.

No studies have examined whether the blood pres-

sure should be brought within normal limits before a patient undertakes an exercise program. However, given the increase in blood pressure during exercise, I believe patients with blood pressure greater than 180/110 mm Hg should start drug treatment first.

What type of exercise is recommended?

In resistive exercise (such as weight lifting), both systolic and diastolic blood pressure increase markedly, reaching 320/250 mm Hg in one study of normotensive subjects doing leg presses.[12] For this reason, I do not recommend maximal weight lifting for hypertensive patients, although I am not aware of any reports of adverse effects during weight lifting. Circuit weight training (multiple repetitions of 40% of maximum) does not exacerbate resting or exercise blood pressure.[13]

Any type of reasonable aerobic activity is beneficial, provided it is of moderate intensity and performed for at least 30 minutes at least three times a week. Even vigorous walking enhances cardiovascular health. I recommend starting at a low intensity and gradually escalating the exercise to 50% to 60% of the patient's maximum predicted heart rate. The patient should be able to talk comfortably during exercise; if not, the activity is too intense.

WHAT IS THE IDEAL DRUG FOR ATHLETES?

The ideal antihypertensive drug for an athlete would lower blood pressure during exercise, not have any significant depressant or stimulant effect or arrhythmogenic potential, preserve blood flow to exercising muscle, and not interfere with utilization of free fatty acid or glycogen. No drug meets all these criteria, but unless the patient us undergoing truly strenuous exercise or serious competition, it does not matter.

Diuretics, beta blockers, and dihydropyridine calcium antagonists are probably not ideal for serious athletes. Diuretics do not interfere with the normal response to exercise, and volume depletion normalizes after the first 8 weeks of therapy, but they cause hypokalemia, which can lead to decreased muscle perfusion, rhabdomyolysis, and arrhythmias. Beta blockers impair exercise performance, left ventricular function, substrate utilization, work capacity, endurance, and possibly thermoregulation. The dihydropyridine calcium antagonists cause reflex stimulation of the sympathetic nervous system. Angiotensin-converting enzyme (ACE) inhibitors probably are the drugs of choice, but there is surprisingly little information on their effect on exercise performance or on the sympathetic nervous system. They have no known effect on cardiovascular responses or substrate utilization during exercise.[14]

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