Optimal strategy for penile rehabilitation after robot-assisted radical prostatectomy based on preoperative erectile function.

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Abstract

WHAT'S KNOWN ON THE SUBJECT? AND WHAT DOES THE STUDY ADD?: Removing of prostate for the treatment of localized prostate cancer is associated with a variable loss of erectile function due to injury of the nerves of erection during operation. Some researchers have reported that after nerve-sparing radical prostatectomy (RP), the natural recovery time of erectile function is at least 2 years. Factors such as thermal damage, ischaemic injury, mechanically induced nerve stretching and the local inflammatory effects of surgical trauma may also impair the cavernous nerves during RP. The concept of penile rehabilitation was first studied by Montorsi et al. in 1997. They showed that the use of any drug or device at or after RP could maximize the recovery of erectile function. Penile rehabilitation programmes (PRPs) with vasoactive agents, such as oral phosphodiesterase-5 inhibitors (PDE5Is), intraurethral and intracavernosal vasoactive agents, and vacuum erection devices (VEDs) can protect erectile tissue integrity and prevent corporal smooth muscle atrophy and diminish collagen formation. The present findings are consistent with previous reports that PRPs have a significant beneficial effect on early erectile function recovery and that preoperative erectile function is one of the important predictors of erectile function after RP. Patients can be referred for penile rehabilitation if they have any degree of erectile function (mild, moderate or normal) before operation. We also showed that the combination of PDE5Is and VEDs for PRPs offers the shortest erectile function recovery period.

OBJECTIVE: To define the optimal penile rehabilitation programme (PRP) based on preoperative Sexual Health Inventory for Men (SHIM) scores after robot-assisted radical prostatectomy (RARP).

PATIENTS AND METHODS: The medical records of 203 patients who underwent bilateral nerve-sparing RARP between 2007 and 2011 were reviewed for the present retrospective study. According to patients' preoperative erection status, group 1 (SHIM = 8-16), group 2 (SHIM = 17-21) and group 3 (SHIM = 22-25) were defined. After bilateral nerve-sparing RARP, phosphodiesterase-5 inhibitors (PDE5Is), a vacuum erection device (VED), the combination of PDE5Is and a VED, or none of them were utilized by all patients for penile rehabilitation. Treatment success was defined as a rigid erection suitable for successful sexual intercourse.

RESULTS: The numbers of patients in groups 1, 2 and 3, respectively, were 9, 22 and 73, and the mean erectile function recovery periods (EFRPs) were 15.44 ± 7.73, 12.31 ± 8.12 and 8.73 ± 5.67 months (P < 0.05). Group 3 offered the best results for EFRP. Only PDE5Is or the combination of PDE5Is and VED use had a beneficial effect on EFRP (P < 0.05). Using PDE5Is and VED together provided the best result, but there was no difference between PDE5Is and a VED (P ≥ 0.05).

CONCLUSIONS: After bilateral nerve-sparing RARP, PRP with PDE5Is, including the combination of PDE5Is and VED, has a beneficial effect on erectile function recovery across all levels of baseline erectile function. Further large randomized control studies are needed to validate these findings.

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