Pursuit of sexual function post-radical prostatectomy

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Abstract

Introduction: In the event of the implementation of prostate cancer screening, younger men will be diagnosed more frequently. Erectile dysfunction (ED) is a frequent long-term complication in men post-radical prostatectomy (RP). Since the introduction of RP, urologists have strived to improve postoperative sexual function. There is little literature, however, in the area of ED prescribing and sexual pursuit in men post-RP. We assessed the pursuit of sexual function in this group of patients.

Methods: The study involved a detailed questionnaire sent to patients who have undergone radical retropublic prostatectomy (RRP) by one surgeon in one institution to ascertain the impact of ED on lifestyle and ED therapy prescription use.

Results: There was a response rate of 59%; most patients who responded were in the 61 to 70 year age group at the time of the survey. About 25% of patients had intercourse more than once in the 4 weeks prior to the survey. A total 50% of patients had no problem or a very small problem with their sexual function. Overall 80% of patients were prescribed ED therapy, but less than 35% of them used it.

Conclusion: Sexual frequency peaked in younger patients who were 3 years or more from surgery. Of note, 46% of men either declined the offer of ED therapy or got the prescription and never used it. Only 34% of men had used their ED prescription in the last 4 weeks. Urologists frequently find that patients behave differently postoperatively, with less interest in sexual activity. Interestingly, we found that 50% of our patients classified their sexual function, as at most a small problem.

Introduction

Prostate cancer is the most common non-cutaneous malignancy affecting men. Its incidence is set to increase by 275% in Ireland over the next 10 years.[1] There has been an increase in the number of young men diagnosed with clinically localized disease. As quality of life is more important and rates of distress from erectile dysfunction (ED) are higher in this age group, there is much controversy about ED post-radical prostatectomy (RP).

RP is the gold standard for organ-confined disease. Unfortunately, there are significant long-term complications as a result of RP, such as urinary incontinence and ED. Landmark work by Walsh and colleagues in the 1980s led to the development of the nerve-sparing RRP.[2] These authors reported potency rates of 86% after bilateral nerve-sparing prostatectomy.[3] The rates of ED post-RP vary greatly in the literature, from 40% to 75%.[4] The introduction of new technologies (laparoscopic and robotic) has led to improved incontinence rates, however ED remains a significant long-term side effect of treatment. Potency rates at 12 months vary for laparoscopic RP from 48% to 72%,[5,6] and from 58% to 80% for robotic.[7,8]

We reviewed men who have undergone RRP in our department to assess their level of erectile function and pursuit of sexual function. Although there is plenty of literature on ED post-RRP, there is little investigation into the pursuit of improved sexual function, rate of prescribed ED therapy and its use.

Methods

We identified patients who underwent RRP in one centre by one surgeon. We searched PubMed for a validated health-care questionnaire. We chose the UCLA prostate cancer index (PCI), but modified it to include information on prescription use (Table 1). This is the most widely used prostate cancer specific health-related quality of life assessment tool.[9] We sent out 349 questionnaires; 206 were returned. This gave us a response rate of 59%, which compares well to other published patient sexual function post-RRP questionnaires.[10] Of the 206 returned questionnaires, 196 were

Table 1. Example of PCI questionnaire

This next section is about your SEXUAL FUNCTION AND SEXUAL SATISFACTION.
Many of the questions are very personal, but they will help us understand the important issues that you face every day.
Remember that your answers to this questionnaire will be kept confidential.
Please answer them honestly about THE LAST 4 WEEKS ONLY.

• How would you rate each of the following during the LAST 4 WEEKS? *(Circle one number on each line)*	Very poor	Poor	Fair	Good	Very good
Your level of sexual desire?	0	1	2	3	4
Your ability to have an erection?	0	1	2	3	4
Your ability to reach orgasm (climax)?	0	1	2	3	4

• How would you describe the usual **QUALITY** of your erections?		
None at all	1	*(Circle one number)*
Not firm enough for any sexual activity	2	
Firm enough for masturbation and foreplay only	3	
Firm enough for intercourse	4	

• How would you describe the **FREQUENCY** of your erections?	
I NEVER had an erection when I wanted one	1
I had an erection LESS THAN HALF the time I wanted one	2
I had an erection ABOUT HALF the time I wanted one	3
I had an erection MORE THAN HALF the time I wanted one	4
I had an erection WHENEVER I wanted one	5

processed; we excluded 7 patients who had postoperative radiotherapy and 3 with artificial sphincters. There were 9 patients excluded from the results sections 1-3 and 1 patient from section 4, as their questionnaires were incomplete.

Results

Demographics

The age range at the time of the survey was 44 to 77 years and 43 to 69 years at the time of surgery. The most common age group at the time of survey to respond was between 60 and 70 years. Most men were between 50 and 60 years when operated on. Most respondents had their surgery between 3 to 6 years before the survey (Table 2).

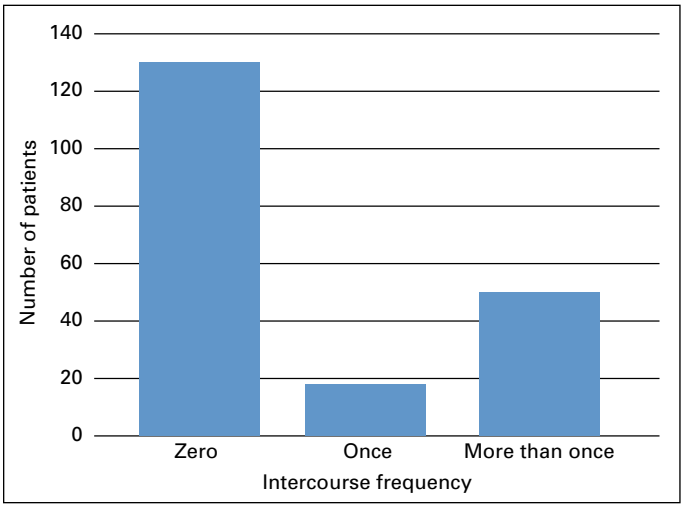

Fig. 1. Number of episodes of intercourse in the last 4 weeks.

Sexual frequency post-RRP

We questioned patients on their sexual frequency in the last 4 weeks. Of the patients surveyed, 130 patients had not had intercourse, 17 had intercourse on one occasion and 49 on more than one occasion (Fig. 1). We then examined the relationship between age and years from surgery and sexual frequency (Fig. 2, Fig. 3). As expected, the men who were within the first 3 years of surgery had the lowest rates of intercourse. The men who were more than 3 years post-surgery had the most intercourse.

Sexual problem post RRP

We investigated whether our patients were distressed as a result of their sexual function (Fig. 4). We found that 50% felt that they had no problem/a small or very small problem with their sexual function. The other half described their sexual function as a moderate or big problem. We then analysed sexual problem in relation to age and time from surgery. The patients most affected were within 3 years of surgery, as opposed to those least affected who were 3 years or more post-RRP (Fig. 5). Surprisingly, men over 60 years were more distressed with their sexual function, and those between 50 and 60 years were least affected (Fig. 6).

Table 2. Age at surgery and survey, years from surgery		
Age at survey	**No. patients**	**% of patients**
40-50	4	2
50-60	60	32
60-70	96	51
>70	27	14
Total	187	100
Age at surgery		
40-50	20	11
50-60	94	50
60-70	73	39
Total	187	100
Years from surgery		
>1	19	10
1-3	33	18
3-6	82	44
>6	53	28
Total	187	100

The prescription of ED therapy post-RRP

We collected the ED prescribing data on 195 patients, of which 81% were prescribed ED therapy. Out of the patients prescribed treatment, the therapy was used at least once in 67.7% of patients. However, 51 patients (32.3%) never used their prescription (Table 3).

There were a total 64 patients using 5 different ED therapy agents in the last 4 weeks; vardenafil (25%), alprostadil per urethra (22%), sildenafil (11%), tadalafil (11%) and alprostadil injection (8%). A total of 23% used their ED treatment agent more than once in the last 4 weeks, while there were 131 patients who did not use their prescription in the last 4 weeks. Of the 51 patients not using their prescription, 35 patients gave a reason (68.6%). Ten patients said there was "no further desire" to continue treatment; this was the most common response. There were 4 patients who did not require it. With 4 patients, their partners were unwilling, 7 patients had medication concerns and 10 patients gave other reasons (wife deceased, laziness, poor mobility) (Fig. 7, part c).

Discussion

We developed our questionnaire from the UCLA PCI. We received a good response rate of 59%, which underlines the importance of these issues to our patients. We feel the questionnaire was an appropriate method of evaluating ED, its treatment and its impact on our patients. We also assessed urinary function (data not included).

As expected, rates of sexual activity were lowest in patients who were within 3 years from surgery and increased to a peak at 3 to 6 years post-surgery. It is also highest in the

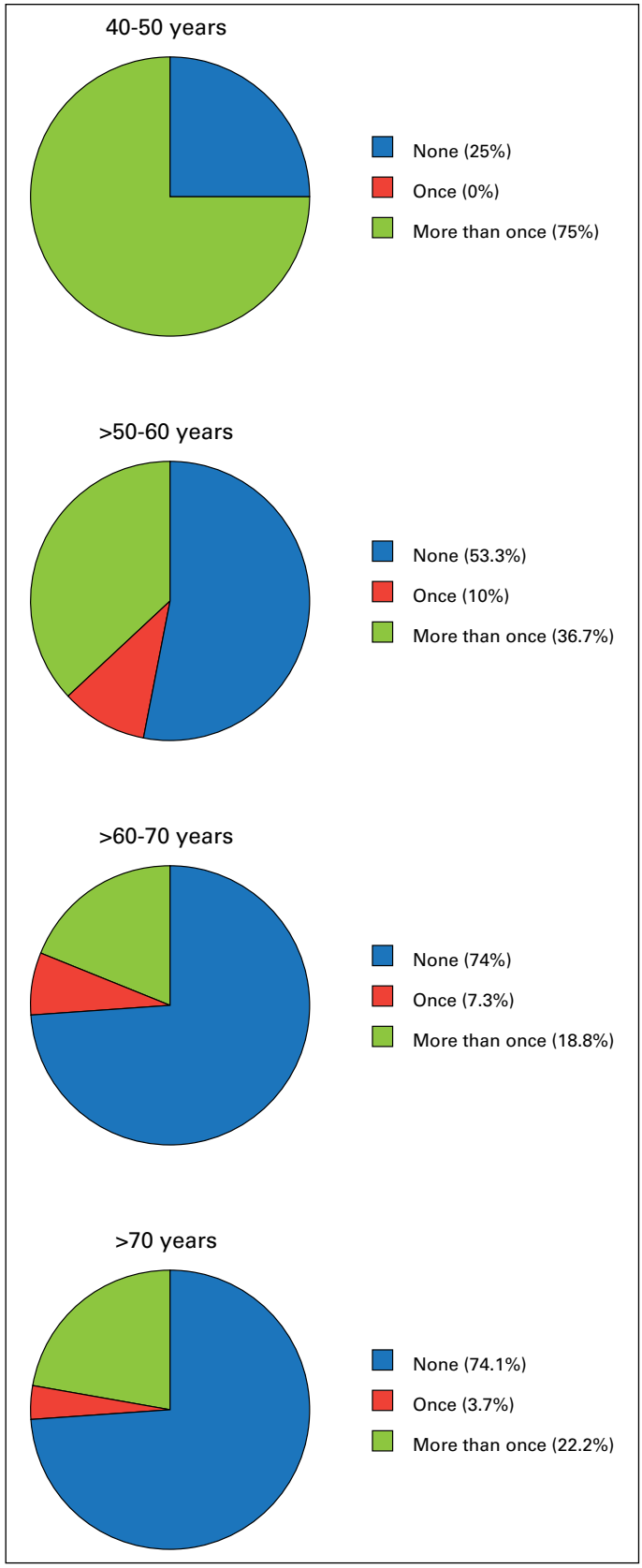

Fig. 2. Sexual frequency and age.

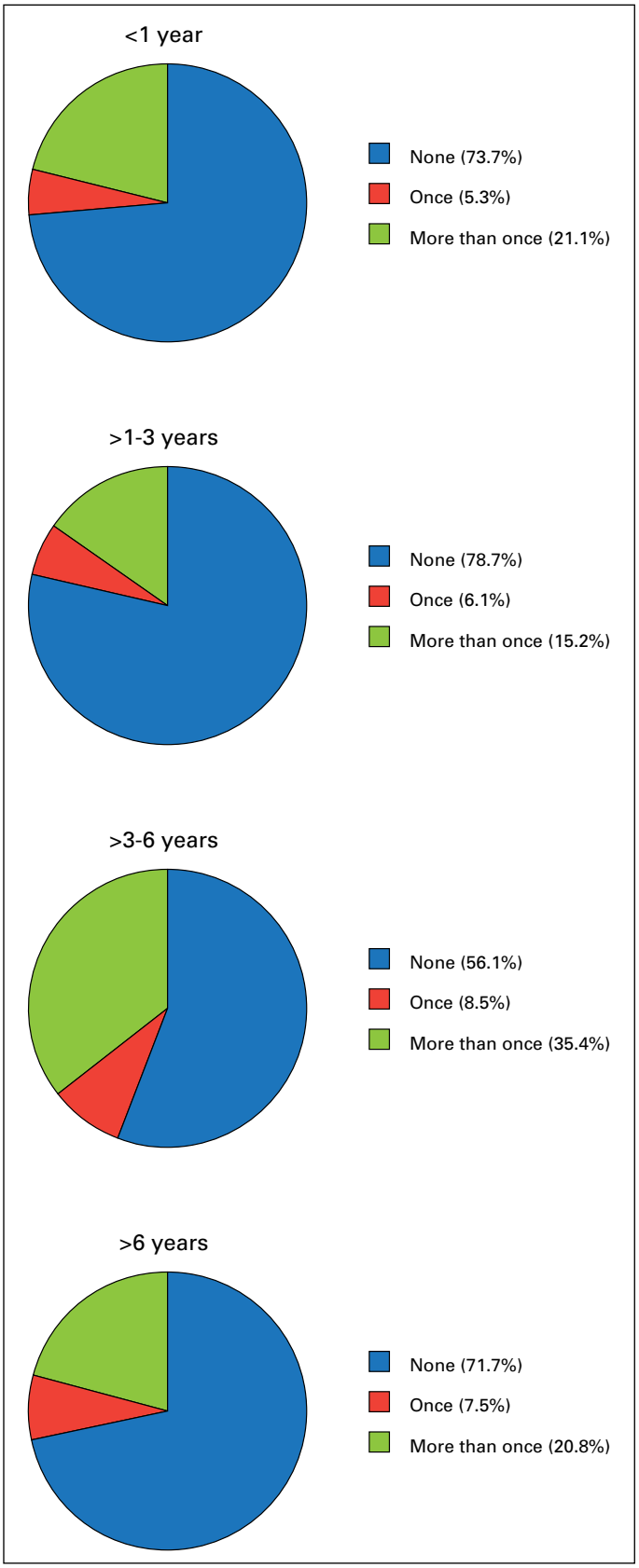

Fig. 3. Sexual frequency and years from surgery.

Table 3. Erectile dysfunction therapy prescribing and usage in the last 4 weeks

Used	Prescribed		
	Yes	No	Total
Yes	107	0	107
No	51	37	88
Total	158	37	195

younger age brackets and decreases with age.

The cause of ED associated with RRP is multifactorial. Factors include the surgeon's experience, surgical approach and neurovascular injury. Patient factors include preoperative erectile function, age, pre-existing conditions (smoking, hypertension and atherosclerosis) and the emotional consequences of the cancer and illness on the patient. Poor preoperative erectile function is the most important patient factor and it is imperative to remember that ED may be present in over 50% of patients preoperatively.[11]

Cavernous smooth muscle depends on neurovascular and psychological factors. Preservation of the erectile function after radical prostatectomy depends on precise and adequate separation of the cavernous nerves in the neurovascular bundle from the prostate.[12] Even with bilateral nerve-sparing surgery, neuropraxia can lead to delayed recovery of erectile function. The recovery of the natural erection can take up to 24 months.

Our questionnaire examined the impact of sexual function on patients' quality of life. In general, the importance of sexual function decreases with increasing age[13] and many patients will adjust to their changed sexual function, especially if their cancer is cured. Urologists have gone to great lengths to achieve improvements in sexual function post-RRP.[14-16] However, in our study 50% had either no, a very small or a small problem with their sexual function postoperatively, while there were 50% who had moderate or big issues with their sexual function. These data reflect other papers on quality of life post-RRP.[17]

Treatment of ED is essential to alleviate symptoms of inadequacy, anxiety and depression. In our study, 158 patients had therapy prescribed. Of these, 32% never used

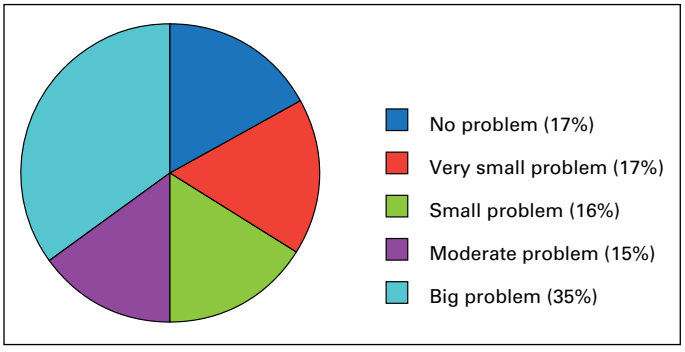

Fig. 4. How big a problem has sexual function been over the last 4 weeks?

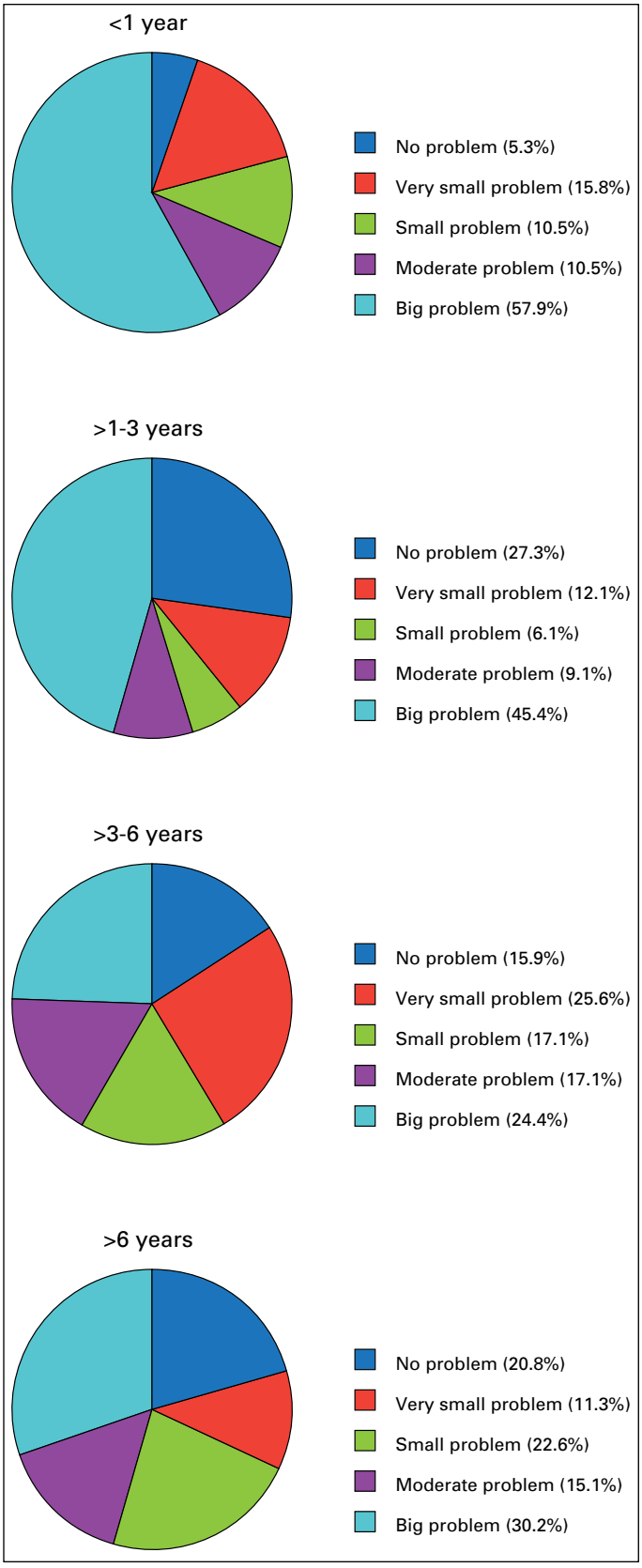

Fig. 5. Sexual problem and years from surgery.

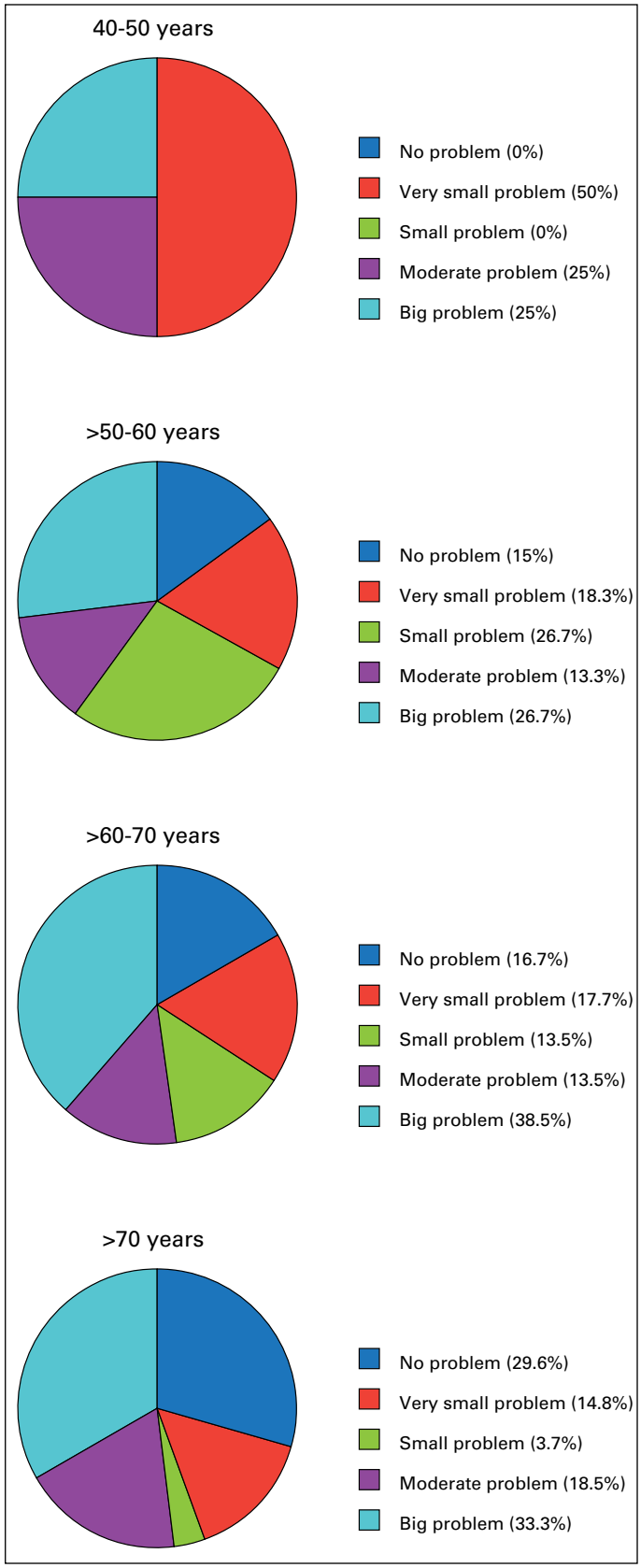

Fig. 6. Sexual problem and age.

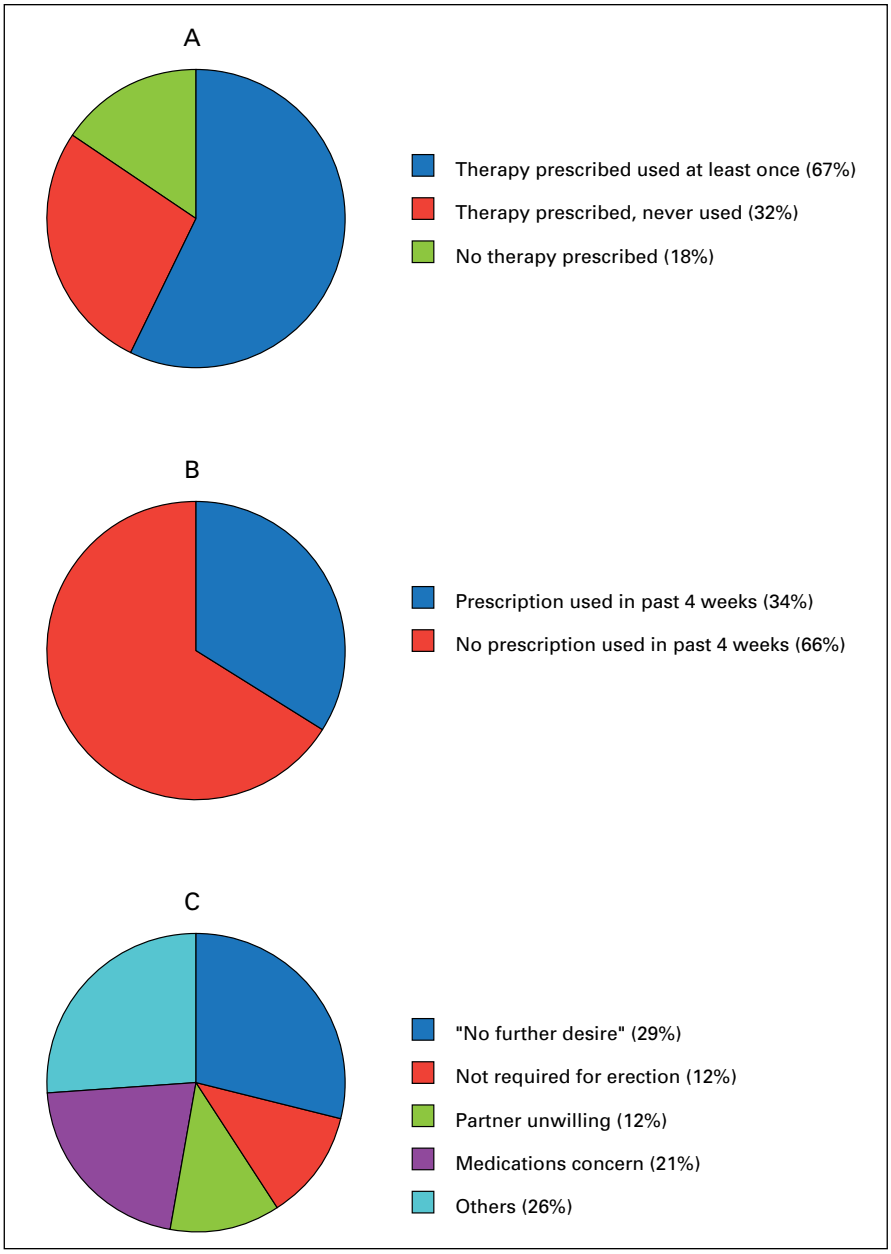

Fig. 7. (A) Rates of erectile dysfunction (ED) therapy prescribed; (B) ED therapy used in the last 4 weeks; and (C) reasons for not using ED therapy.

the prescription. The most frequent reason for this was lack of desire (29%). It is important to note that over 20% avoided ED therapy due to medication concerns. This underlines the importance of proper patient counselling.

The options available to men post-RP include pharmacological, assistive aids and implants. Stepwise trial of treatments from oral to injections to aids or implants should be followed. From our patient group, 64 patients had used an ED therapy in the last 4 weeks. The most commonly used medication was vardenafil (25%). The phosphodiesterase type 5 (PD5) inhibitors are the most commonly prescribed first-line therapy for ED post-RP. A good response to PD5 inhibitors depends on the dose prescribed, age of the patient, neurovascular injury and delay to treatment. Sildenafil has previously been found to be ineffective in the first 9 months,[18] but its efficacy increases with time as the nerves recover from intra-operative injury.

Despite their effectiveness, assistive aids are discarded by 30% to 50% of men after 1 year.[4] In a similar study, Salonia and colleagues revealed that 50% of patients post-bilateral nerve-sparing surgery freely decided not to start therapy; of those who commenced therapy, 73% eventually discontinued it.[19] The high dropout rates for ED treatment demonstrate that it is vital for urologists to educate patients on treatment options, their correct use and warning of possible side effects.

Conclusion

Sexual frequency peaks for younger men and for those who are 3 to 6 years post-surgery; 45% of men will either decline a prescription or receive and never use it. It is essential that urologists and general practitioners inform patients of ED post-RP. Additionally, patients need to be counselled on treatments and their potential side effects. Interestingly, we found that half of our patients had no or only a small concern about their sexual function. It should be pointed out that despite urologists' efforts to restore sexual function, about 50% of men are not interested in perusing sexual function after RP; this is likely a result of a change in their priorities after their cancer diagnosis and treatment.

Competing interests: None declared.

This paper has been peer-reviewed.

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