Diagnosis and treatment of chronic bacterial prostatitis and chronic prostatitis/chronic pelvic pain syndrome: a consensus guideline

Jon Rees, Mark Abrahams*, Andrew Doble† and Alison Cooper‡ for the Prostatitis Expert Reference Group (PERG)

Backwell and Nailsea Medical Group, Bristol, *Department of Pain Medicine, †Department of Urology, Addenbrooke’s Hospital, Cambridge, and ‡Evidence Team, Prostate Cancer UK, London, UK

Objectives
To improve awareness and recognition of chronic bacterial prostatitis (CBP) and chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) among non-specialists and patients. To provide guidance to healthcare professionals treating patients with CBP and CP/CPPS, in both non-specialist and specialist settings. To promote efficient referral of care between non-specialists and specialists and the involvement of the multidisciplinary team (MDT).

Patients and Methods
The guideline population were men with CBP or CP/CPPS (persistent or recurrent symptoms and no other urogenital pathology for ≥3 of the previous 6 months). Consensus recommendations for the guidelines were based on a search to identify literature on the diagnosis and management of CBP and CP/CPPS (published between 1999 and February 2014). A Delphi panel process was used where high-quality, published evidence was lacking.

Results
CBP and CP/CPPS can present with a wide range of clinical manifestations. The four main symptom domains are urogenital pain, lower urinary tract symptoms (LUTS – voiding or storage symptoms), psychological issues and sexual dysfunction. Patients should be managed according to their individual symptom pattern. Options for first-line treatment include antibiotics, α-adrenergic antagonists (if voiding LUTS are present) and simple analgesics. Repeated use of antibiotics, such as quinolones, should be avoided if there is no obvious symptomatic benefit from infection control or cultures do not support an infectious cause. Early use of treatments targeting neuropathic pain and/or referral to specialist services should be considered for patients who do not respond to initial measures. An MDT approach (urologists, pain specialists, nurse specialists, specialist physiotherapists, general practitioners, cognitive behavioural therapists/psychologists, and sexual health specialists) is recommended. Patients should be fully informed about the possible underlying causes and treatment options, including an explanation of the chronic pain cycle.

Conclusion
Chronic prostatitis can present with a wide variety of signs and symptoms. Identification of individual symptom patterns and a symptom-based treatment approach are recommended. Further research is required to evaluate management options for CBP and CP/CPPS.

Keywords
guidelines, chronic bacterial prostatitis, chronic prostatitis with chronic pelvic pain syndrome, prostatitis

Introduction
Prostatitis is a common condition, with 35–50% of men reported to be affected by symptoms suggesting prostatitis during their lifetime [1,2]. Based on a population of >10 600 participants, a systematic review found an 8.2% prevalence of prostatitis symptoms [1].

The symptomatic, chronic forms of prostatitis as defined by the USA National Institutes of Health (NIH; Box 1) [3], are chronic bacterial prostatitis (CBP; NIH category II) and chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS; NIH category III). Despite having a significant negative impact on patients’ quality of life (QoL) [4] and presenting diagnostic and therapeutic challenges for physicians, CBP and CP/CPPS have received relatively little attention in the literature, in comparison with other urological conditions [2]. The absence of robust and clear epidemiological data may also reflect the lack of a uniform definition and the overlap of

© 2015 The Authors
BJU International | doi:10.1111/bju.13101
published by John Wiley & Sons Ltd on behalf of BJU International. www.bjui.org

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.
Guidelines

**Guideline and Objectives**

A Prostatitis Expert Reference Group (PERG) was convened by Prostate Cancer UK, to develop consensus guidelines to improve the diagnosis and management of CBP and CP/CPPS. The main objectives of the guidelines were to:

- Provide guidance to healthcare professionals treating patients with CBP and CP/CPPS, both in non-specialist and specialist settings.
- Improve awareness and recognition of these conditions among non-specialists and patients.
- Promote efficient referral of care between non-specialists and specialists and the involvement of the multidisciplinary team (MDT).

**Methods**

**PERG**

PERG members (Appendix S1) were invited from a network of clinical experts in the urology field across a broad range of disciplines, including primary care, urology (medical and nurse specialists), pain medicine, physiotherapy and psychology, as well as patient representatives. Also included were a technical team from Prostate Cancer UK and Hayward Medical Communications, with a background in communication, policy development and evidence research. The PERG met several times during the guideline development process, to discuss objectives and scope of the guidelines, assess the literature review outcomes and formulate the guidelines.

**Literature Search**

A search was conducted to identify literature on the diagnosis and management of CBP and CP/CPPS published between 1999 and 7 February 2014. The primary database searched was Medline (via PubMed); additional sources included the Cochrane Library and professional guideline groups, including the National Institute for Health and Care Excellence (NICE) and the European Association of Urology (EAU) (Appendix S2). For the full literature search protocol see Appendix S3. References used in the guideline were graded according to the Oxford Centre for Evidence-based Medicine (OCEBM) Levels of Evidence (Table 1) [5].

**Delphi Panel**

Due to the limited number of published randomised controlled trials (RCTs) in CBP and CP/CPPS, the PERG concluded that the guideline would benefit from input from a supporting panel of experts. Thus, a web-based Delphi panel process was conducted to form consensus recommendations where high-quality, published evidence was found to be lacking. This anonymous and iterative group technique is designed to gather individual opinions from experts and transform these into a group consensus [6]. The Delphi panel comprised three questionnaire rounds via Survey Monkey® (for the survey questions see Appendix S4). Where consensus (agreement of ≥70% of respondents) was not achieved, input was obtained from the PERG and supporting technical team.

**Results**

The Delphi panel survey was circulated to 58 participants (GPs, urologists, pain specialists, nurse specialists, physiotherapists, cognitive behavioural specialists and sexual health specialists), of whom 35 (60%), 29 (50%) and 26 (45%) responded to the first, second and third rounds, respectively. All treatment recommendations that achieved consensus from the PERG or Delphi panel are shown below in bold type.

**Signs and Symptoms**

The wide range of clinical manifestations of CBP and CP/CPPS reflect the variety of possible underlying causes (e.g.
Patients can be considered to be (i) in the early stages of bacterial infection, inflammation and/or neurological damage) [7,8]. Table 2 [3,4,9–44] summarises the range of potential presenting symptoms, based on evidence from the literature and PERG consensus discussions. Symptoms can fluctuate considerably over time [7,8]. The four main domains are urogenital pain, LUTS (voiding or storage symptoms), psychological issues and sexual dysfunction [45].

In order to reflect the evidence base, where some treatments are recommended for use in ‘early’ and/or ‘late’ stages of CBP and CP/CPPS, consensus was sought regarding definitions of these stages.

### Recommendations

- **Patients can be considered to be (i) in the early stages of the disease if they have experienced persistent, recurrent symptoms for >6 months and are refractory to initial lines of pharmacotherapy (Level 5).**

#### Clinical Assessment and Diagnosis

Table 3 [11,20,38,40,46–48] summarises the investigations and physical examinations that should be considered during initial clinical assessment. Differential diagnosis is important, given the significant overlap of symptoms of CBP and CP/CPPS with those of other conditions [11,38,40]: investigations to exclude these are detailed in Table 3, with specific recommendations for Prostate Specific Antigen (PSA) testing in Box 2 [11,38,40,49].

A definitive diagnosis of CBP requires the presence of (typically recurrent) UTI and isolation of an aetiologically recognised organism from prostatic fluid or urine [38,40]. There is no ‘gold standard’ for a definitive diagnosis of CP/CPPS, which is typically based on patient history, symptoms and exclusion of

| Table 2 Signs and symptoms reported by patients with CBP and CP/CPPS. |
|---|
| **Pain symptoms** [9–14]  |
| Pain or discomfort in one or multiple urogenital regions including the:  |
| - Perineum  |
| - Suprapubic region  |
| - Testicles, penis (especially penile tip pain)  |
| - Lower back, abdomen  |
| - Inguinal region/groin  |
| - Rectum  |
| Pain on urination, or that increases with urination  |
| Pain during or after ejaculation  |
| Muscle tenderness or dysfunction in abdominal/pelvic regions  |
| Neuropathic pain  |
| Functional bowel symptoms (e.g. IBS)  |
| **Urinary symptoms** [9,11,17–20]  |
| Voiding LUTS (weak stream, straining and hesitancy)  |
| Storage LUTS (urgency ± urge incontinence, increased urinary frequency, nocturia and dysuria)  |
| Urethral burning during, and independent of, micturition  |
| Haematospermia (blood in semen)  |
| Recurrent UTI (more applicable to CPB)  |
| **Sexual dysfunction symptoms** [17,22–30]  |
| ED  |
| Ejaculatory dysfunction (premature, delayed or pain during, or after, ejaculation)  |
| Decreased libido  |
| **Psychosocial symptoms** [3,18,32,33,35,36]  |
| Anxiety or stress  |
| Depression  |
| Cognitive/behavioural consequences  |
| Decreased QoL  |

Cohort studies report ≥1 LUTS symptom in 39–68% of patients [17,18]. There may also be an association with recurrent UTIs in a minority of patients [19,21].

Findings from cohort studies (n = 130–1 800) indicate that total or partial ED is reported by 15–55% of patients with CP/CPPS [22,31–34], while the prevalence of overall, self-reported sexual dysfunction is higher at 46–92% [22,23,31,34]. Correlation studies of sexual dysfunction symptoms with NIH-CPSI scores indicate that patients with CP/CPPS with sexual dysfunction have higher total and QoL scores, suggesting that sexual symptoms can contribute substantially to morbidity [28,31–33,35,36]. However, in one study the presence of ED was shown not to independently affect symptom severity or QoL in patients with CP/CPPS [37].

CBP and CP/CPPS can have a significant negative impact on QoL, potentially causing limitations to activity [38] and the QoL of patients with CBP or CP/CPPS has been shown to be as poor as that of patients with congestive heart failure or Crohn’s disease [4]. Negative behavioural consequences and psychosocial symptoms, such as depression and anxiety, can also have a significant impact [39,40]. Small (n < 250) case-control studies indicate that depression, anxiety and panic disorder are significantly more common in men with chronic symptoms vs controls, using responses to the Patient Health Questionnaire (PHQ) [41] or other psychometric questionnaires (for example, the Perceived Stress Scale) [29,42,43]. Furthermore, a small (n = 61) cohort study suggests patients with CP/CPPS can experience pain catastrophising (a negative cognitive-affective response to anticipated or actual pain) and this was linked to more severe pain and QoL issues and the risk of developing chronic pain [44].

*ED*, erectile dysfunction; *IBS*, irritable bowel syndrome; *UTI*, urinary tract infection.
other causes [40]. Referral to specialist care should be considered at initial presentation if there is uncertainty regarding the possible differential diagnosis, or if severe symptoms that require immediate specialist attention are present [11].

**Tools for evaluation and monitoring**

Validated symptom-scoring instruments for CBP and CP/CPPS (Table 4) [50,51] include: the NIH Chronic Prostatitis Symptom Index (NIH-CPSI; evaluating pain, voiding and impact on QoL); the International Prostate Symptom Score (IPSS; urinary symptoms and impact on QoL); and the more recent Urinary, Psychosocial, Organ-specific, Infection, Neurological/systemic, and Tenderness (UPOINT) classification, that aims to stratify patients into specific symptom-led phenotypes [50]. The five-item version of the International Index of Erectile Function (IIEF-5) or Sexual Health Inventory for Men (SHIM) specifically evaluate ED.

### Table 3 Summary of physical examinations and investigations to consider during the clinical assessment of CBP and CP/CPPS.

| Examinations and investigations* | Setting | Rating | Comments |
|----------------------------------|---------|--------|----------|
| **Physical examinations** | | | |
| DRE | Non-specialist | Specialist | Core | Optional |
| Including assessment of external genitalia and pelvic floor muscle dysfunction | | | | |
| Abdomen | To exclude other causes of abdominal pain | | | |
| | | | | |
| Urine dipstick and/or MSU for culture/microscopy | Non-specialist | Specialist | Core | Optional |
| | | | | |
| Four-glass or two-glass test† | Non-specialist | Specialist | Core | Optional |
| VB1 – voided bladder 1 | | | | To evaluate whether there is a bacterial cause, the four-glass (Meares–Stamey) test is considered the ‘gold standard’ for diagnosis (or exclusion) of CBP, whereby voided bladder (VB) urine (VB1, VB2 and VB3) and EPS samples are taken for culture/microscopy [38,46]. The two-glass test (VB2 and VB3) was shown to offer similar diagnostic sensitivity to the four-glass test [20], while other studies advocate urethral swab plus post-prostatic massage urine analysis (VB3) [47] |
| VB2 – voided bladder 2 | | | | |
| EPS – expressed prostatic secretions | | | | |
| VB3 – voided bladder 3 | | | | |
| Represents the urethra | | | | |
| Represents the bladder | | | | |
| Represents the prostate | | | | |
| Represents the prostate | | | | |
| Tests to exclude differential diagnoses‡ | Non-specialist | Specialist | Core | Optional |
| PSA testing to exclude prostate cancer (refer to Box 2) | | | | Conditions to be excluded are: urogenital/urological/rectal cancer; prostatic abscess; urinary tract disease (e.g. cystitis, urethritis or upper UTI); urethral stricture; BPE; obstructive calculus or foreign body; pudendal neuralgia; epididymo-orchitis; prostate tuberculosis; neurological disease affecting the bladder |
| STI screen (e.g. via NAATs) | | | | |
| Uroflowmetry, retrograde urethrogram or cystoscopy (to exclude BOO, urethral stricture or bladder neck stenosis) | | | | |
| Prostate biopsy (only if prostate cancer suspected based on PSA level and/or DRE results) | | | | |
| TRUS (only in refractory patients in whom prostatic abscess/other pathology suspected) | | | | |
| Diagnostic cystoscopy (if bladder cancer suspected) | | | | |
| Urethral swab and culture (if urethritis suspected) | | | | |
| MRI (if prostatic abscess suspected) | | | | |

*Based on information adapted from Map of Medicine. Prostatitis – Primary Care, January 2014 [11]; Map of Medicine. Prostatitis – Secondary Care, January 2014 [38]; Nickel et al. [48]; and PERG consensus. †Pursued when CBP is suspected. ‡The investigations pursued will depend on symptom presentation and patient history. N.B. Local provider services may vary for the division of assessment options across non-specialist and specialists settings.
Psychosocial screening

CBP and CP/CPPS can negatively impact QoL [4] and lead to negative behavioural consequences [18,29,39,40,42]. Moreover, men reporting a previous history of sexual, physical or emotional abuse were more likely to have symptoms suggesting CP/CPPS, and previous abuse increased both the NIH-CPSI pain and urinary scores [52]. The Delphi approach was used to reach a consensus on the implementation of psychosocial screening.

Table 4 Validated questionnaires for assessment of CBP and CP/CPPS.

| Questionnaire | Description |
|---------------|-------------|
| NIH-CPSI      | Eight-item questionnaire (total score 0–43) measuring: |
|               | – Pain (four questions evaluating pain location, frequency and severity, 0–21) |
|               | – Voiding (two questions evaluating voiding and storage symptoms, 0–10) |
|               | – Impact on QoL (three questions, 0–12) |
| IPSS          | Eight-item questionnaire measuring: |
|               | – Urinary symptoms (seven questions evaluating incomplete bladder emptying, frequency, intermittency, urgency, weak stream, straining and nocturia, 0–35) |
|               | – Impact on QoL (one question, 0–6) |
| UPOINT [50]   | Aims to stratify patients into specific symptom-led phenotypes. Measures urinary symptoms, psychosocial dysfunction, organ-specific findings, infection, neurological/systemic routes, and tenderness of muscles [50]. Has been used to inform phenotypically directed multimodal treatment in CP/CPPS [51]. |
| IIEF-5 or SHIM | Five-item questionnaire for screening and diagnosis of ED (past 6 months of symptoms) |

Recommemptions

- Patients should be screened for psychosocial symptoms (e.g. anxiety or stress) using either the psychosocial yellow flag system and/or Patient Health Questionnaire-9 (PHQ-9) and/or Generalised Anxiety Disorder-7 (GAD-7) scales (Box 3). If a clinically relevant level of psychosocial symptoms is observed, referral to a psychosocial specialist (e.g. psychiatrist, specialist psychologist or cognitive behavioural therapist) should be considered (Level 5).

Patient communications

It is important that the diagnosis, aetiology and management approaches are discussed with the patient; consensus gained via the Delphi approach recommends the following:

- At first presentation, other concerns or differential diagnoses, including urological cancers and infertility,
Patients should be informed of the underlying causes of CBP and CP/CPPS to help improve their understanding. This may include an explanation of basic pelvic anatomy, the chronic pain cycle, and potential routes for pain (neuropathic vs nociceptive).

Reliable sources for patient information include those available through the Prostate Cancer UK website (Appendix S2).

**Treatment Strategies**

Table 5 [9,22,48,53–108] summarises the results of the literature search on interventions for CBP or CP/CPPS.

**α-adrenergic antagonists (‘α blockers’)**

Most of the placebo-controlled RCTs that evaluated α-adrenergic antagonists (tamsulosin, alfuzosin, doxazosin, terazosin and silodosin) in CBP or CP/CPPS found significant reductions in symptoms and/or improvement in QoL scores (Table 5). These findings have contributed to widespread use of these agents in these settings, although their clinical significance has been questioned [64].

**Recommendations**

- **α-adrenergic antagonists** may have a modest treatment effect regarding total, urinary symptom, pain and QoL scores in CBP and CP/CPPS, and should be considered as an initial treatment option (Level 1).

There is a lack of evidence to inform best practice for the use of these agents and the Delphi panel process was used to reach a consensus.

**Recommendations (Level 5)**

- **Treatment with α-adrenergic antagonists** should be considered in patients who present with significant voiding LUTS (e.g. slow urinary flow, hesitancy).
- **If no relief from voiding LUTS or other symptoms of CBP or CP/CPPS is achieved within 4–6 weeks**, treatment should be stopped and a different pharmacotherapy considered. Patients should be referred to specialist care if other approaches have been exhausted.
- **Due to the adverse side-effect profiles of this class of drugs, consider offering uroselective α-adrenergic antagonists** (e.g. tamsulosin, alfuzosin and silodosin) as first-line treatment in patients with CBP and CP/CPPS who present with voiding LUTS (Level 5).

**Antibiotics**

A wide spectrum of microbial strains may cause infection in CBP (Box 4) [9]. Despite the widespread use of antibiotics in patients with CBP and CP/CPPS, evidence to support their use in these populations is relatively weak. Ciprofloxacin, levofloxacin, azithromycin, doxycycline, and clarithromycin are reported to be effective in eradicating infection and/or improving symptoms in CBP, although there is a lack of prospective, head-to-head placebo-controlled trials to guide choice of agent (Table 5). Table 6 [9,109] summarises key features of the different antibiotic classes. The quinolones (e.g. ciprofloxacin and levofloxacin) are considered the antibiotics of choice because of their favourable pharmacokinetic properties [9].

Many patients without confirmed infection respond to antibiotic intervention, possibly reflecting an anti-inflammatory or anti-neuropathic effect of the antimicrobial agent. Available evidence indicates that antibiotics can provide symptom improvement in patients with CP/CPPS (Table 5).

### Table 5

| Antibiotic Class       | Initial Antibiotics | Subsequent Antibiotics |
|------------------------|--------------------|------------------------|
| Quinolones             | Ciprofloxacin      | Levofloxacin           |
| Macrolides             | Azithromycin       | Clarithromycin         |
| Tetracyclines          | Doxycycline        |                        |
| Others                 | Clindamycin        | Tetracyclines           |

© 2015 The Authors

514 BJU International published by John Wiley & Sons Ltd on behalf of BJU International
### Table 5 Interventions for CBP and CP/CPPS: results of literature search.

| Category          | Description                                                                                       |
|-------------------|---------------------------------------------------------------------------------------------------|
| **α-adrenergic antagonists** | In all, 10 placebo-controlled RCTs (n = 58–272) were identified that evaluated α-adrenergic antagonists (tamsulosin [53–55], alfuzosin [56,57], doxazosin [58,59], terazosin [60,61] and silodosin [62]) in CBP and CP/CPPS. Most (eight) showed positive results, with significant differences vs placebo, and/or QoL scores (54–57,59,60), or in scores using other validated symptom scoring tools [58,61]. However, there was heterogeneity in primary endpoints, patient eligibility criteria (e.g. previous exposure to α-blockers) and trial duration (1.5–6 months). A recent systematic review and network meta-analysis of α-blocker RCTs found significant differences vs placebo in total, pain, and QoL NIH-CPSI scores [63]. However, another recent systematic review questioned the clinical significance of these reductions [64]. Notably, two of the larger, placebo-controlled trials that evaluated tamsulosin (n = 196) [53] and alfuzosin (n = 272) [57] failed to show any significant difference in total NIH-CPSI scores, the only outcome achieving statistical significance being the score for ejaculation on the Male Sexual Health Questionnaire (P = 0.04) in the alfuzosin trial. Possible reasons include the short treatment duration (≤12 weeks) and/or inclusion of refractory patients with previous exposure to α-blockers [57]. |
| **Antibiotics**    | Despite the widespread use of antibiotics in patients with CBP and CP/CPPS, evidence in a CBP population primarily exists within RCTs or retrospective comparative trials lacking placebo control. Microbiological eradication rates were 40–77% for ciprofloxacin [65–67], 75% for levofloxacin [65], 80% for azithromycin [66,68,69], 77% for doxycycline [68], 80% for clarithromycin [69], and 62–77% for azithromycin + ciprofloxacin (depending on ciprofloxacin dose) [70]. Higher eradication rates (>90%) were reported with azithromycin and levofloxacin either alone, in combination or sequentially, depending on the locality of infection (urethral, prostatic or both) in patients with CBP with C. trachomatis infection [71]. Significant differences in symptom scores, as assessed by changes in NIH-CPSI scores, were seen between baseline and the end of treatment in two trials [70,71]. Others reported improvements in clinical outcomes but failed to use validated tools to report these [65–69]. Of the identified comparative studies in patients with CBP, one (n = 408) found that levofloxacin offered advantages over ciprofloxacin for bacterial eradication rates and clinical improvement [67], while another of similar size (n = 377) and design showed no significant differences between these agents [65]. Azithromycin was reported to be more effective than ciprofloxacin in the treatment of C. trachomatis infections [66]. Although there is a lack of prospective, head-to-head placebo-controlled trials to assess intraclass and interclass antibiotic comparisons, each class is associated with its own advantages and caveats (Table 6). The quinolones, such as ciprofloxacin and levofloxacin, are considered the antibiotics of choice because of their favourable pharmacokinetic properties [9]. Another antibiotic agent, fosfomycin, achieves reasonable intraprostatic tissue levels and is active against extended-spectrum -lactamase producing organisms; it can be considered in patients with multi-resistant Gram-negative infections, based on susceptibility results and discussion with local microbiologists. |
| **CP/CPPS**        | Only three small-to-medium sized (n = 48–196), adequately designed RCTs, which assessed ciprofloxacin [53], levofloxacin [48], and tetracycline hydrochloride [72] vs placebo in patients with CP/CPPS, were identified. Although symptom improvement was observed, the ciprofloxacin study failed to show a statistical difference in NIH-CPSI total score from baseline to 6 weeks in a CP/CPPS population [53]. Similar results were observed in the levofloxacin study; while symptom improvement with antibiotic treatment was seen, the results failed to achieve significance vs placebo, either at end of treatment (6 weeks) or follow-up (12 weeks) vs baseline [48]. However, the average time from diagnosis of CP/CPPS was 6.2 years [53] and 6.5 years [48], respectively, at study entry. Such patients may represent a treatment-refractory phenotype for which antibiotic therapy may not be appropriate. Low patient numbers may also have contributed to the lack of significance. More promising results were observed in a comparison of tetracycline hydrochloride vs placebo, with significant differences in NIH-CPSI scores and bacterial eradication rates; however, patient numbers were small (n = 48) [72]. Recent direct meta-analyses of these trials showed that antibiotics provide symptom improvement, but not at a significant level [63,64]. Evidence from small (n = 20–105), randomised, comparative trials provides mixed support for using antibiotics in CP/CPPS, with significant differences from baseline in symptoms observed using levofloxacin [73], but not ciprofloxacin [74]; however, the ciprofloxacin study imposed a stringent significance threshold (P < 0.001). |
| **Pain pharmacotherapies** | Published evidence on the use of pharmacotherapy for treatment of pain in CBP and CP/CPPS populations is scarce. Only two RCTs were identified for NSAIDs, one of which evaluated rofecoxib [75] (now withdrawn from the market). The second RCT evaluated celecoxib in patients with CP/CPPS, with a statistically significant decrease in NIH-CPSI total (P = 0.015), pain (P = 0.006) and QoL (P = 0.032) scores after 2, 4 and 6 weeks; however, the effects were limited to the short duration of therapy [76]. An RCT (n = 50) evaluated ibuprofen vs a terpenic mixture (Rowatinex®) in CP/CPPS; ibuprofen (n = 25) was associated with a significant improvement from baseline in total, pain and QoL NIH-CPSI scores after 6 weeks’ treatment, but was outperformed by the terpenic mixture [77]. However, the small study size and lack of a placebo arm are caveats. The conclusions from two recent meta-analyses were mixed; one reported that NSAIDs were 80% more likely to achieve a favourable response than placebo (n = 190, relative risk [RR]: 1.8, 95% CI 1.2–2.6), based on the combination of three trials evaluating rofecoxib, celecoxib and a corticosteroid [63]. The second analysis, based on only the rocoxib and celecoxib trials, concluded that no significant differences in efficacy could be ascertained for NSAIDs vs placebo [64]. No trials were identified that evaluated opioid analgesics in the CBP or CP/CPPS populations. For co-analgesics, only one RCT was identified, which evaluated pregabalin (n = 218) vs placebo (n = 106) in the CP/CPPS population [78]. Compared with the placebo group, patients in the pregabalin arm had reductions in the NIH-CPSI total score and subscores (P < 0.05). However, pregabalin therapy for 6 weeks was not superior to placebo in the rate of a 6-point decrease in the NIH-CPSI total score [78]. |
### Table 5 (continued)

| 5α-reductase inhibitors | The evidence-base for the use of 5α-reductase inhibitors in CP/CPPS is limited, with only three small (n = 41–76) RCTs identified, which evaluated finasteride [79–81]. The first study reported showed that finasteride significantly reduced pain and voiding symptoms vs baseline; however, no statistically significant differences vs a small and non-comparable control group were seen, which was probably due to lack of power [80]. A later study, which compared finasteride with Serenoa repens (saw palmetto), showed that patients treated with finasteride had a significant and durable improvement (1-year trial duration) in NIH-CPSI total and pain domains, but not for urinary symptoms, when compared with baseline [79]. However, the trial size (n = 64) and lack of a placebo arm are notable caveats. A third study showed better outcomes, via measurements of subjective overall assessment and NIH-CPSI scores, for finasteride vs placebo, but the results were not statistically significant [81]. Although designed to assess whether dutasteride reduces the risk of prostate cancer in patients at increased risk (those aged 50–60 years and with PSA levels of ≥2.5 ng/mL or those aged >60 years with PSA levels ≥3.0 ng/mL), the REduction by DUtasteride of prostate Cancer Events (REDUCE) study prospectively examined the effect of dutasteride vs placebo in men with prostatitis-like pain (defined as NIH-CPSI pain subscore ≥2) and prostatitis-like syndrome (perineal or ejaculatory pain plus NIH-CPSI pain subscore ≥4) by evaluating NIH-CPSI scores at baseline and throughout the study (every 6 months for 4 years) [82]. NIH-CPSI total score decreased significantly at 48 months in the dutasteride group vs placebo in men with prostatitis-like pain (n = 67, P < 0.001) and with prostatitis-like syndrome (n = 427, P = 0.03). In addition, there were significantly more responders (defined as improvement of ≥4 units and ≥6 units in total CPSI score) with dutasteride vs placebo for both prostatitis subgroup populations assessed [82]. While the REDUCE study was not primarily designed as a CP/CPPS treatment trial, the significant reductions in NIH-CPSI scores compared with placebo in a relatively large patient cohort (n = 1105) with prostatitis-like pain or syndrome, suggests that use of 5α-reductase inhibitors in older (≥50 years) patients with PSA levels of ≥2.5 ng/mL (for those aged 50–60 years) or >3.0 ng/mL (those aged >60 years) may be of clinical benefit; large, sufficiently powered RCTs, specifically in men with CP/CPPS, are needed to support this hypothesis. As described in the full NICE clinical guidelines for the management of LUTS in men [83], a larger body of RCT evidence has shown that use of 5α-reductase inhibitors to treat LUTS in men with BPE; such guidelines are listed in Appendix S2.|
| Combined/multimodal therapy | The treatment combination most frequently evaluated has been that of α-blocker and antibiotic therapy. In a placebo-controlled trial, which compared tamsulosin vs ciprofloxacin vs a combination of both over 6 weeks in CP/CPPS, the total NIH-CPSI scores demonstrated significant mean improvement of 3–6 points from baseline in all treatment groups. However, no statistically significant differences between treatment groups were seen [53]. Similar results were obtained in a comparison of doxazosin, levofloxacin and a combination of both, with the multimodal arm failing to provide any additional benefit over monotherapy [84]. However, small (n ≤ 105) comparative trials evaluating combinations of tamsulosin plus levofloxacin [73] and doxazosin plus ciprofloxacin [74] have shown that combined therapies outperformed monotherapy approaches in terms of NIH-CPSI score improvements. Evaluations of three- or four-component combinations of antibiotic, α-blocker, phytotherapy and/or physiotherapy techniques provide data in favour for combined therapies [51,85,86], however, the lack of a control arm in these studies is a notable caveat.|
| Specialist physiotherapy | Three small (n = 19–31) pilot studies [87–89] have shown that a pelvic floor biofeedback re-educating programme significantly reduces symptom severity in patients with CP/CPPS. The largest of the three studies, which evaluated the effect of six to eight biofeedback sessions, showed a mean reduction in the total NIH-CPSI score from 23.6 at baseline to 11.4 after treatment (P < 0.001) [88]. Other small-to-medium studies suggest symptom improvement can be achieved by combining myofascial trigger point release with paradoxical relaxation training [22,90,91]. A small (n = 24) randomised, placebo-controlled trial in patients with CP/CPPS found that TENS was significantly more effective than placebo in reducing pain symptoms [92]. Small pilot studies of acupuncture in patients with CP/CPPS refractory to standard pharmacotherapy have provided positive results; in 12 men, a 6-week acupuncture regimen (given twice weekly), achieved a significant decrease in total, pain, urinary and QoL NIH-CPSI scores after an average 33 weeks follow-up (P = 0.05) [93]. Similarly, symptom improvements, as assessed by the NIH-CPSI, were seen with a 5-week [89] and 6-week course [95] of acupuncture (on the bilateral BL33 region), with improvements in pain, voiding symptoms and QoL in non-inflammatiory CP/CPPS (Randomised, sham-controlled studies (n = 39–89) support these results; a 10-week course of acupuncture proved almost twice as likely as sham treatment to improve CP/CPPS symptoms [96], while a three-arm trial showed that after 6 weeks of electro-acupuncture, the NIH-CPSI total score had decreased significantly vs the sham and advice and exercise groups alone (P < 0.001) [97]. A recent review of the evidence on the use of acupuncture in prostatitis concluded that the findings should encourage healthcare providers to use acupuncture to manage pain in CP/CPPS, in conjunction with standard treatment [98].|
| Phytotherapy | Three small RCTs were identified that evaluated phytotherapy in CP/CPPS [99–101]. In a trial of a rye pollen extract (Cernilton) (n = 70) vs placebo (n = 69), the pollen extract significantly improved total, pain and QoL NIH-CPSI scores in patients with inflammatory CP/CPPS vs placebo, without any severe adverse effects [101]. Significant differences between another pollen extract (Prostat/Politis) and placebo were demonstrated in a small (n = 60) trial, but a validated tool for symptom scoring was not used [99]. A small (n = 30) RCT showed that the bioflavonoid quercetin significantly improved clinical symptoms in CP/CPPS, as assessed by changes in NIH-CPSI scores vs placebo, with the improvement in total score resulting from improvements in the pain score (from 10.3 to 6.2, P = 0.005) and QoL score (from 8 to 4.9, P = 0.004) but not the urinary score (from 2.7 to 1.5, P ≠ significant) [100]. A recent network meta-analysis of these trials indicated that phytotherapy offers a favourable response rate vs placebo (0.65, 95% CI 0.51–0.84) [63]. A prospective, comparative trial provides additional evidence that phytotherapy offers symptom improvement in inflammatory CP/CPPS, with significant changes in symptoms from baseline observed for Profluran® (Serenoa repens, selenium, and lycopene) [102]. However, patients with CP/CPPS treated with Serenoa repens reported no appreciable long-term improvement in NIH-CPSI scores in a 1-year comparative study vs finasteride [79]. The only trial in the CRP population compared the addition of four phytotherapy agents (Serenoa repens, U. dioica, curcumin and quercetin) to antibiotic treatment vs antibiotic treatment alone; significant differences in favour of the combined treatment were seen [103]. |
Table 5 (continued)

| Surgical intervention | Results of small (n < 40) pilot studies suggested that TUNA [104] and transurethral microwave thermotherapy [105] offered some symptom improvement compared with baseline in patients with CP/CPPS, but large RCTs are required before firm conclusions about the clinical effectiveness of such surgical interventions can be made. A systematic review conducted in 2008 evaluated the clinical effectiveness of repetitive prostatic massage in treating CBP and CP/CPPS and identified four studies covering 195 patients, which included a randomised prospective study, two case series and an anecdotal report [106]. The largest study in this review evaluated two subgroups receiving either a combination of antibiotics and tri-weekly prostatic massage for 1 month (n = 42) or antibiotics alone for the same period (n = 39). Overall, a statistically significant reduction in the NIH-CPSI total and domain scores was seen after treatment. However, no difference was recorded between the scores after treatment of patients who did or did not receive repeated prostatic massage [107]. The review concluded that the available studies do not provide high-quality evidence, due to the lack of randomised placebo/sham-controlled trials [106]. In addition, no two studies have used the same protocol or tool for outcome measurement, thus preventing the pooling of data [106]. Neuronomodulation via sacral nerve stimulation has also been reported to reduce pelvic pain with one sham-controlled medium-sized study (n = 89) providing support; 12 weeks of percutaneous posterior tibial nerve stimulation produced significant improvement in the total NIH-CPSI score and visual analogue scale for pain in patients with non-inflammatory CP/CPPS [108].

RR, relative risk. NSAIDs, non-steroidal anti-inflammatory drugs.

Box 4 Pathogens implicated in prostatitis. Adapted from Grabe et al. [9].

| Aetiologically recognised pathogens | Escherichia coli |
| Staphylococci |
| Streptococci |
| Corynebacterium spp. |
| Chlamydia trachomatis |
| Ureaplasma urealyticum |
| Mycoplasma hominis |
| May cause CBP in those with immunodeficiency |
| May cause CPP in those with immunodeficiency |
| Mycobacterium tuberculosis |
| Candida species |
| Rare pathogens e.g. Coccidioides immitis, Blastomyces dermatitidis, Histoplasma capsulatum |

Recommendations

- Antimicrobial therapy may have a moderate effect on total, urinary, pain and QoL scores in CBP and CP/CPPS and should be considered as an initial treatment option (Level 1).
- Antimicrobial therapy should be guided by bacterial cultures and sensitivities, taking into consideration any drug interactions and/or contraindications (Level 2).

With respect to the recommendation of first-line antibiotic intervention, as well as treatment duration/cessation, the consensus of the Delphi panel was as follows (all Level 5):

- For patients with early-stage CBP and CP/CPPS, offer a quinolone (e.g. ciprofloxacin or ofloxacin) for 4–6 weeks as first-line therapy.
- A repeated course of antibiotic therapy (4–6 weeks) should be offered only if a bacterial cause is confirmed or if there is a partial response to the first course.
- If a bacterial cause is excluded (e.g. via urine dipstick or culture) and symptoms do not improve after antibiotic therapy, a different treatment method or referral to specialist care should be considered.

Pain management

Published evidence on the use of pharmacotherapy for treatment of pain in CBP and CP/CPPS is scarce (Table 5). Given the link between CP/CPPS and neuropathic pain [39,78,110], guidance should be sought from the NICE clinical guideline on the pharmacological management of neuropathic pain [111] if neuropathic pain is suspected. The involvement of, or referral to, a specialist pain team should be sought in such cases. Table 7 [109] summarises pharmacotherapy options that may be considered for the treatment of neuropathic pain.

Due to a lack of published RCT evidence for the use of pain medications in CBP and CP/CPPS, the Delphi panel approach was used to reach a consensus on best practice for the treatment of pain symptoms in the early stages of these conditions.

Recommendations (All Level 5)

- In patients with early-stage disease who present with pain symptoms, regular paracetamol may be offered.
- NSAIDs should be offered only for short-term treatment of pain, to patients with early-stage CBP or CP/CPPS whose symptoms are suspected to be due to an inflammatory process, or those judged to be experiencing an inflammatory flare. These patients should be under regular review by a GP.
- To prevent unwanted adverse effects, NSAIDs should be stopped within 4–6 weeks of treatment initiation if they do not reduce symptoms.
If pain is considered to be neuropathic in origin, in patients with early-stage CBP or CP/CPPS, use of.

Table 6 Antibiotic treatment options. Based on information adapted from Grabe et al. [9], the British National Formulary [109] and PERG expert consensus.

| Antibiotic | Advantages | Considerations | PERG recommendation |
|------------|------------|----------------|---------------------|
| Quinolones: e.g. Ciprofloxacin | Favourable pharmacokinetic profile, with good bioavailability and excellent penetration into prostate. Good activity against typical and atypical pathogens | Drug interactions; Phototoxicity; CNS adverse events (depending on choice of agent), tendinitis | Consider – first-line (Level 5) Dose and duration should be sufficient to eradicate the infection, e.g. ciprofloxacin 500 mg BID × 28 days |
| Trimethoprim | Active against most relevant pathogens. Monitoring unnecessary. Good penetration into prostate | No activity against Pseudomonas, some enterococci and some enterobacteriaceae | Consider – second-line Dose and duration should be sufficient to eradicate the infection, e.g. 200 mg BID × 28 days |
| Tetracyclines: e.g. Doxycycline | Good activity against Chlamydia and Mycoplasma | Contraindicated in renal and liver failure. Unreliable activity against coagulase-negative staphylococci, E. coli, other enterobacteriaceae, and enterococci. No activity against P. Aeruginosa. Risk of skin sensitisation | Consider – second-line Dose and duration should be sufficient to eradicate the infection, e.g. doxycycline 100 mg BID × 28 days |
| Macrolides: e.g. Azithromycin | Good penetration into prostate and Active against Chlamydia and Gram-positive bacteria | Minimal supporting data from RCTs. Unreliable activity against Gram-negative bacteria | Reserve for special indications, based on advice from microbiologist and microbiological findings |

BID, twice daily (bis in die).

Table 7 Treatment options for neuropathic pain. Based on information from the British National Formulary [109] and PERG expert consensus.

| Analgesic class | Drug name | Starting dose | Maintenance dose | Common adverse effects | PERG practical points |
|-----------------|-----------|---------------|------------------|-----------------------|-----------------------|
| Gabapentinoids  | Gabapentin | 100–300 mg at night | 600 mg TID | Dizziness, sedation, dyspepsia, dry mouth, ataxia, peripheral oedema, weight gain | (Level 5) Few drug interactions. Safe in overdose. Gut transport mechanism can become saturated, limiting absorption from gastrointestinal tract |
| Pregabalin      | 50–75 mg at night | 300 mg BID | Dizziness, sedation, dyspepsia, dry mouth, ataxia, peripheral oedema, weight gain | Linear pharmacokinetics |
| Amitriptyline   | 10 mg in evening | 50–75 mg in evening | Sedation, dry mouth, blurred vision, urinary retention, constipation, postural hypotension, weight gain | (Level 5) Many patients obtain pain relief at lower dose |
| Duloxetine      | 30 mg in evening (or in morning, if insomnia) | 60–120 mg QD | Nausea, sedation, insomnia, headache, dizziness, dry mouth, constipation | (Level 5) Less sedating. May cause insomnia in some patients |

BID, twice daily (bis in die); QD, once-daily (quaque die); SNRI, serotonin-noradrenaline (known in the USA as norepinephrine) reuptake inhibitor; TID, three times daily (ter in die).

- In patients with early-stage CBP or CP/CPPS, use of opioids for pain management should be avoided, due to the risk of dependency.
- If pain is considered to be neuropathic in origin, treatment with a gabapentinoid (e.g. pregabalin or gabapentin), a tricyclic antidepressant (e.g. amitriptyline, nortriptyline or trimipramine) or a selective serotonin-noradrenaline (known in the USA as norepinephrine) reuptake inhibitor (SNRI; e.g. duloxetine) is warranted (Table 7).

5α-reductase inhibitors

Evidence for the use of 5α-reductase inhibitors in CP/CPPS is very limited. Some improvements in symptomology were noted in small studies with finasteride (Table 5) and also a larger study with dutasteride in older patients with prostatitis-like pain or syndrome who were judged to be at risk of prostate cancer [PSA level of >2.5 ng/mL (aged 50–60 years) or >3.0 ng/mL (aged >60 years)] [82]. As noted in the full NICE clinical guidelines for the management of LUTS in men [83], there is a larger body of RCT evidence for use of 5α-reductase inhibitors to treat LUTS in men with BPE (Appendix S2).

Recommendation

- There is insufficient evidence to warrant recommending 5α-reductase inhibitors as monotherapy in CP/CPPS, unless co-existing BPE is present (Level 2).
Combined/multimodal therapy
Using multiple interventions to target different symptom areas simultaneously may be expected to provide a more beneficial approach than monotherapy. The treatment combination most frequently evaluated has been that of α-blocker and antibiotic therapy. Data are limited, with conflicting findings (Table 5). The Delphi panel approach was, therefore used to reach a consensus.

Recommendation (Delphi panel)
- Multimodal/combined therapy should be uniquely designed for each individual patient, according to history, physical examination and investigations. Depending on the symptoms at presentation, the following may be considered for adding to first-line antibiotic therapy (all Level 5).
  - An α-blocker and/or an NSAID.
  - An agent targeting neuropathic pain (e.g. pregabalin).
  - A 5α-reductase inhibitor (predominantly for patients with coexisting LUTS with BPE).

Follow-up and Treatment of Refractory Symptoms
Patients should be followed-up 4–6 weeks after their first presentation. If a bacterial cause has been confirmed, or the patient has had a partial response to antibiotics, a repeat course of antibiotic therapy should be considered. The management strategy should be guided by symptoms.

Recommendations (All Level 5)
- If a bacterial cause is excluded and no symptom improvement is observed after antibiotic therapy, a different treatment method or referral to specialist care should be considered.
- Patients who are refractory to treatment should be questioned about the possibility of any past trauma (including physical, emotional or sexual abuse; questions about abuse should only be implemented if the treating clinician has sufficient skills and resources to manage patients who have experienced abuse).
- An MDT approach is recommended, with pharmacotherapy, physical and psychosocial approaches being integrated into a holistic treatment programme individualised for the patient.
- The MDT may include urologists, pain specialists, nurse specialists, physiotherapist, GPs, cognitive behavioural/psychological therapists and sexual health specialists.

Pain management
With any pain condition, delayed recovery can lead to chronicity, compromised physical function and development of psychosocial sequelae. If neuropathic pain is suspected, this should be addressed with consideration of pharmacological strategies as already outlined above (Table 7).

Recommendations (PERG)
- When pain is severe and refractory to the treatments outlined in Table 7, or is significantly impairing the patient’s lifestyle and ability to participate in daily activities, referral to a specialist pain service should be considered (Level 5).

The role of the pain service is to provide a multidisciplinary assessment of the patient and formulate an individualised therapeutic management plan combining treatment of pain, physical disability and psychosocial co-morbidity (Box 5).

Specialist physiotherapy
The symptoms of CBP and CP/CPPS may result from physical dysfunction, such as abnormal pelvic muscle spasm and muscle tenderness [10,12]. Therapies that aim to improve relaxation and coordinated use of the pelvic floor muscles, such as biofeedback physical therapy and pelvic floor re-education, as well as myofascial trigger point release, may play a role in providing symptom improvement in patients with CP/CPPS (Table 5). Several studies of acupuncture have provided positive results (Table 5). Transcutaneous electrical nerve stimulation (TENS) [92] was also reported to be beneficial. As most of this evidence is derived from small proof-of-principle or pilot studies, and little is reported on best practice approaches, the Delphi process was used to reach a consensus.

Recommendations (All Level 5)
- Before referral to specialist physiotherapy, a number of diagnostic tests (e.g. sexually transmitted infection)

Box 5 Pain management services.
- Surgical pain interventions: e.g. nerve block procedures. In suitable patients, these can produce temporary or long-term pain relief and, in the context of a physical rehabilitation programme, can enable the patient to progress with physical therapy and rehabilitation
- Education and training in pain management strategies
- Optimisation of analgesic and anti-neuropathic medications
- Intensive and individualised specialist physical therapy or psychology
- Neuromodulation procedures (e.g. spinal cord and sacral nerve root stimulation).
Some specialised pain services can provide physiotherapist- or psychologist-led pain management programmes for patients with poor physical function or complex pain problems.
Clinical assessment, including history, physical examination and investigations

Patient presents with symptoms

Empirical antibiotics (4–6 weeks), if antibiotic naïve for CP/CPPS

Symptoms resolve

No bacterial cause identified and no response to antibiotics: consider sexual abuse/trauma, psychosocial factors and yellow flags.

Follow up at 4–6 weeks

If bacterial cause confirmed or partial response to antibiotics: consider one further course of antibiotics at sufficient dosage and duration for each instance of a confirmed bacterial cause or partial response to antibiotics; consider sexual abuse/trauma, psychosocial factors and yellow flags.

Persistent symptoms

Full assessment in primary care and management along local pathways, including PHQ-9 and GAD-7 (refer to NICE CG90 and NICE CG91).

Pain

Explain neuropathic pain to patient (refer to Box 1§)

Stop simple analgesics and NSAIDs, unless nociceptive/inflammatory route is suspected.

Initiate neuropathic pain treatment. Refer to NICE CG173.

Psychosocial symptoms

Urinary symptoms

Full LUTS assessment. Management as per NICE CG97.

Consider referral to local mental health services. Refer for specialist assessment if not responding, including involvement of MDT¶.

Sexual symptoms

If voiding LUTS present, alpha blockers for 4–6 weeks

If pain present, simple analgesics ± NSAIDs

Perineal, anal, testicular and penile pain

Consider referral to the MDT, specialist pain service and/or a condition-specific service at any stage, including at initial presentation and at the regular clinical reviews, especially if the patient has severe pain or their pain significantly limits their lifestyle, or their underlying health condition has deteriorated.

Assessment and management as per BSSM guidelines.

Low threshold for referral for psychosexual counselling and/or specialist urology/andrology services.

Fig. 1. Treatment algorithm for the diagnosis and management of CBP and CP/CPPS. In patients describing typical neuropathic pain symptoms (e.g. ‘burning’, ‘shooting’ pain), or in any patient with persistent pain (>3 months), consider the possibility of non-specific pain and treat with appropriate analgesic medication strategies.

¶ Members of the MDT may include: urologist, pain consultant/specialist, nurse specialist, nurse practitioner, physiotherapist, GP, cognitive behavioural/psychological therapist and sexual health specialist.

§ Box 1 can be found in the full version of the guideline: http://prostatecanceruk.org/media/2403685/prostate-cancer-uk-chronic-prostatitis-guideline-full-sep-2014.pdf

NICE CG90: www.nice.org.uk/guidance/cg90/resources/guidance-depression-in-adults-pdf

NICE CG91: http://www.nice.org.uk/guidance/cg91/resources/guidancedepression-in-adults-with-a-chronic-physical-health-problem-pdf

NICE CG97: http://www.nice.org.uk/guidance/cg97/resources/guidancedepression-in-adults-with-a-chronic-physical-health-problem-pdf

NICE CG173: www.nice.org.uk/guidance/cg173/resources/guidance-neuropathic-pain-pharmacological-management-pdf

BSSM = British Society for Sexual Medicine; CP/CPPS = chronic prostatitis/chronic pelvic pain syndrome; GAD-7 = Generalised Anxiety Disorder 7; MDT = multidisciplinary team; NICE = National Institute for Health and Care Excellence; NSAIDs = non-steroidal anti-inflammatory drugs; PHQ-9 = Patient Health Questionnaire-9; LUTS = lower urinary tract symptoms; UUTS = upper urinary tract symptoms.
screen, culture/microscopy of voided bladder urine, urethral smear, nucleic acid amplification test and relevant pelvic physical examinations; Table 3) should be conducted to confirm a physical causative route, and exclude non-physical causes, for symptoms.

- After referral, a full assessment (e.g. symptom score scaling, examination of the pelvic floor muscles) should be completed to guide the subsequent sequence of physiotherapy treatments.

- If the patient presents with psychosocial symptoms, a planned therapeutic strategy involving stress management (including explanation of the chronic pain cycle) should be considered, in addition to seeking advice from the patient’s GP or urologist regarding potential onward referral to a psychosocial specialist.

- The following specialist physiotherapy treatment options may be considered: pelvic floor re-education; local pelvic floor relaxation; biofeedback; general relaxation; deep relaxation/mindfulness; trigger point release; myofascial release; stretches; exercise for pain management; TENS; acupuncture for trigger point release and pain management; bladder retraining.

The Delphi panel did not reach a consensus on a number of specialist physiotherapy techniques (core stability training, diaphragmatic breathing exercises, acupuncture for urgency, abdominal massage for constipation, and defaecation techniques), although it was felt that they might be suitable for certain patients, according to symptoms.

**Phytotherapy**

Various phytotherapies, including pollen extracts, bioflavonoids and/or *Serenoa repens* (saw palmetto) have been reported to improve clinical symptoms in small studies in patients with CBP or CP/CPPS (Table 5).

**Recommendations**

- Phytotherapy has a modest beneficial effect on symptom improvement in CBP and CP/CPPS and may be considered as a treatment option in treatment-refractory patients (Level 2).

**Cognitive behavioural therapy (CBT) and psychotherapy**

While it is recognised that psychosocial symptoms may be part of CBP and CP/CPPS [29,41–43], no evidence from RCTs or comparative studies is available to support the use of psychological treatment or CBT in these settings. The Delphi process was used to reach a consensus regarding best practice for these techniques.

**Recommendations (Level 5)**

- Psychosocial symptoms should be assessed in both the early and late stages of CBP and CP/CPPS. If there is a significant suspicion of psychological factors contributing to a patient’s condition, these should be screened for.

- CBT should be considered in conjunction with other treatments in later-stage CBP and CP/CPPS, as it may improve pain and QoL.

**Surgical interventions**

The evidence on surgical management techniques such as prostatectomy, transurethral resection of the prostate (TURP), transrectal high-intensity focused ultrasound (HIFU), transurethral needle ablation (TUNA) of the prostate, and transurethral microwave thermotherapy in CP/CPPS is very limited (Table 5). Repetitive prostatic massage has also been evaluated and the potential usefulness of this technique (with or without a general anaesthetic) in refractory patients was put to the Delphi panel but no consensus was reached.

Neuromodulation techniques, such as sacral nerve stimulation [108], have been reported as being successful in treating CP/CPPS but, again, most of this evidence is derived from small proof-of-principle or pilot studies and, to date, little is reported on best practice approaches.

**Recommendations**

- There is insufficient evidence to warrant recommending surgical techniques, including radical prostatectomy, TURP, HIFU or prostatic massage for the treatment of CBP or CP/CPPS, except in the context of a clinical trial setting (Level 3).

Figure 1 provides an algorithm for the diagnosis and management of CBP and CP/CPPS. This summarises the

| Table 8 Priorities for management of CBP and CP/CPPS. |
|------------------------------------------------------|
| Patients should be managed according to their individual symptom pattern – no single management pathway is suitable for all patients |
| Repeated use of antibiotics, such as quinolones, should be avoided where no obvious benefit from infection control is evident or cultures do not support an infective cause |
| Early use of medication targeting neuropathic pain should be considered for all patients who are refractory to initial treatments. If neuropathic pain is suspected, ensure a prompt referral to an MDT that includes pain specialists |
| Early referral to specialist services should be considered when patients fail to respond to initial measures |
| An MDT approach should be implemented, including urologists, pain specialists, nurse specialists, specialist physiotherapists, GPs, cognitive behavioural therapists/psychologists and sexual health specialists |
| Patients should be fully informed about possible underlying causes and treatment options |

© 2015 The Authors

BJU International published by John Wiley & Sons Ltd on behalf of BJU International
consensus recommendations of the PERG and Delphi panel, as presented above.

Discussion
We have developed consensus guidelines aimed at improving the diagnosis and management of CBP and CP/CPPS. Full and ‘quick reference’ versions of the original guidelines are available from the Prostate Cancer UK website (http://prostatecanceruk.org/prostatitissguideline). The quick reference version is also available at http://www.bjuinternational.com/?p=21102. These guidelines were issued in 2014 and will be considered for review in 3 years’ time, unless relevant evidence updates suggest otherwise.

Priorities for implementation are listed in Table 8. We conclude that further research is required to evaluate the following:

- Multimodal pharmacotherapy for patients with CP/CPPS who are refractory to initial mono-pharmacotherapy approaches.
- 5α-reductase inhibitors in CP/CPPS, especially in older patients (aged >50 years) and/or those at increased risk of prostate cancer (aged 50–60 years with PSA levels of >2.5 ng/mL or aged >60 years with PSA level of >3.0 ng/mL).
- The cost impact and effectiveness of interventions to treat CBP and CPPS.
- The effectiveness of a multidisciplinary approach and symptom-based management vs ‘usual care’ for patients with CBP and CP/CPPS.
- Phosphodiesterase type 5 (PDE5) inhibitors for those with sexual dysfunction.
- The prevalence and impact of psychosocial issues and other co-morbidities e.g. irritable bowel syndrome (IBS).

Acknowledgements
The authors would like to thank the following PERG members for their contributions: Victor Abu, Trevor Allan, Theresa Neale, Penny Nixon, Maxwell Saxty, Sarah Mee, Kirsty Haves, and Jenny Lee (for affiliations, see Appendix S1). Fiona Carter, of South West Training Surgical Network, provided consultancy services during the Delphi panel process by acting as a moderator during questionnaire round refinement. Hayward Medical Communications provided writing and editorial support to develop the original guidelines for the Prostate Cancer UK website. Julia Balfour, Medical Writer/Consultant, Dundee, edited and abridged the original guidelines for this journal. The authors also thank all Delphi panel members who participated in the process.

Conflicts of Interest
Prostate Cancer UK funded the project and guideline development. The funding that Prostate Cancer UK receives from pharmaceutical and medical device companies does not exceed 5% of its total annual income and was not used for the development of this guideline. Hayward Medical Communications received funding from Prostate Cancer UK to manage the literature review, web-based Delphi process and development of the original guideline. Julia Balfour received Prostate Cancer UK funding for editorial support. All PERG members and Delphi panel members participated in the process on a voluntarily basis. Jon Rees (PERG chair) has conducted consultancy work for, and received speaker fees from, Prostate Cancer UK for providing GP medical education classes. All other PERG members declared no conflicts of interest.

References
1. Krieger JN, Lee SW, Jeon J, Cheah PY, Liong ML, Riley DE. Epidemiology of prostatitis. Int J Antimicrob Agents 2008; 31(Suppl. 1): 585–90
2. Pavone-Macaluso M. Chronic prostatitis syndrome: a common, but poorly understood condition. Part I. EAU-EBU Update Ser 2007; 5: 1–15
3. Nyberg LM, Krieger JN, Nickel JC. National Institutes of Health Classification of Chronic Prostatitis. In Nickel JC ed, Textbook of Prostatitis. London: CRC Press, 1999: 28
4. McNaughton Collins M, Pontari MA, O’Leary MP et al. Quality of life is impaired in men with chronic prostatitis: the Chronic Prostatitis Collaborative Research Network. J Gen Intern Med 2001; 16: 656–62
5. University of Oxford Centre for Evidence Based Medicine. OCEBM Levels of Evidence System. Available at: http://www.cebm.net/index.asp?o=5653. Accessed June 2014
6. Hsu CC, Sandford BA. The delphi technique: making sense of consensus. Pract Assess Res Eval 2007; 12: 1–8. Available at: http://pareonline.net/getvn.asp?v=12&n=10. Accessed March 2015
7. Mahal BA, Cohen JM, Allsop SA et al. The role of phenotyping in chronic prostatitis/chronic pelvic pain syndrome. Curr Urol Rep 2011; 12: 297–303
8. Zhao Z, Zhang J, He J, Zeng G. Clinical utility of the UPOINT phenotype system in Chinese males with chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS): a prospective study. PLoS One 2013; 8: e52044
9. Grabe M, Bjerklund-Johansen TE, Botto H et al. Guidelines on Urological Infections, 2013. European Association of Urology. Available at: http://uroweb.org/wp-content/uploads/19_Urological-infections_LR.pdf. Accessed March 2015
10. Hetrick DC, Ciol MA, Rothman I, Turner JA, Freest M, Berger RE. Musculoskeletal dysfunction in men with chronic pelvic pain syndrome type III: a case-control study. J Urol 2003; 170: 828–31
11. NHS Choices. Map of Medicine. Prostatitis – Primary Care, January 2014. Available at: http://healthguides.mapofmedicine.com/choices/pdf/prostatitis1.pdf. Accessed June 2014
12. Shoskes DA, Berger R, Elmi A, Landis JR, Propert KJ, Zeitlin S. Muscle tenderness in men with chronic prostatitis/chronic pelvic pain syndrome: the chronic prostatitis cohort study. J Urol 2008; 179: 556–60
13. Vicari E, La Vignera S, Arcoria D et al. High frequency of chronic bacterial and non-inflammatory prostatitis in infertile patients with prostatitis syndrome plus irritable bowel syndrome. PLoS One 2011; 6: e18647
14. Wagenlehner FM, van Tull JW, Magri V et al. National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) symptom evaluation in multinational cohorts of patients with chronic prostatitis/chronic pelvic pain syndrome. Eur Urol 2013; 63: 953–9
15. Clemens JQ, Brown SO, Kozloff I, Calhoun EA. Predictors of symptom severity in patients with chronic prostatitis and interstitial cystitis. J Urol 2006; 175: 963–7

© 2015 The Authors
522 BJU International published by John Wiley & Sons Ltd on behalf of BJU International
Incidence and clinical characteristics of National Institutes of Health type III prostatitis in the community. J Urol 2005; 174: 2319–22

Daniels NA, Link CL, Barry MJ, McKinlay JB. Association between past urinary tract infections and current symptoms of chronic prostatitis/chronic pelvic pain syndrome. J Natl Med Assoc 2007; 99: 509–16

Nickel JC, Shoskes D, Wang Y et al. How does the pre-massage and post-massage 2-glass test compare to the Meares-Stamey 4-glass test in men with chronic prostatitis/chronic pelvic pain syndrome? J Urol 2006; 176: 119–24

Nickel JC. Classification and diagnosis of prostatitis: a gold standard? Andrologia 2003; 35: 160–7

Anderson RU, Wise D, Sawyer T, Chan CA. Sexual dysfunction in men with chronic prostatitis/chronic pelvic pain syndrome: improvement after trigger point release and paradoxical relaxation training. J Urol 2006; 176: 1534–9

Davis SN, Binik YM, Amsel R, Carrier S. A sexual dysfunction domain important for quality of life in men with urological chronic pelvic pain syndrome? Signs “UPOINT” to yes. J Urol 2013; 189: 146–51

Gonen M, Kalkan M, Cenker A, Ozkardes H. Prevalence of premature ejaculation in Turkish men with chronic pelvic pain syndrome. J Androl 2005; 26: 601–3

Mehta A, Stehner DS, O’Brien K, Mulhall JP. Defining the aetiology of erectile dysfunction in men with chronic pelvic pain syndrome. Andrology 2013; 1: 483–6

Muller A, Mulhall JP. Sexual dysfunction in the patient with prostatitis. Curr Opin Urol 2005; 15: 404–9

Sadeghi-Nejad H, Setefl A. Sexual dysfunction and prostatitis. Curr Urol Rep 2006; 7: 479–84

Shoskes DA, Landis JR, Wang Y, Nickel JC, Zeitlin SI, Nadler R. Impact of post-ejaculatory pain in men with category III chronic prostatitis/chronic pelvic pain syndrome. J Urol 2004; 172: 542–7

Smith KB, Pukall CF, Tripp DA, Nickel JC. Sexual and relationship functioning in men with chronic prostatitis/chronic pelvic pain syndrome and their partners. Arch Sex Behav 2007; 36: 301–11

Wagenlehner F, Pilatz A, Linn T et al. Prostatitis and andrological implications. Minerva Urol Nefrol 2013; 65: 117–23

Lee SW, Liong ML, Yuen KH et al. Adverse impact of sexual dysfunction in chronic prostatitis/chronic pelvic pain syndrome. Urology 2008; 71: 79–84

Magri V, Perfetti G, Montanari E, Marras E, Chiaffarino F, Parazzini F. Chronic prostatitis and erectile dysfunction: results from a cross-sectional study. Arch Ital Urol Androl 2008; 80: 172–5

Trinchieri A, Magri V, Cariani L et al. Prevalence of sexual dysfunction in men with chronic prostatitis/chronic pelvic pain syndrome. Arch Ital Urol Androl 2007; 79: 67–70

Liang CZ, Zhang XJ, Hao ZY, Shi HQ, Wang KX. Prevalence of sexual dysfunction in Chinese men with chronic prostatitis. BJU Int 2004; 93: 568–70

Davis SN, Morin M, Binik YM, Khalife S, Carrier S. Use of pelvic floor ultrasound to assess pelvic floor muscle function in Urological Chronic Pelvic Pain Syndrome in men. J Sex Med 2011; 8: 3173–80

Liang CZ, Hao ZY, Li HJ et al. Prevalence of premature ejaculation and its correlation with chronic prostatitis in Chinese men. Urology 2010; 76: 962–6

Samplaski MK, Li J, Shoskes DA. Inclusion of erectile domain to UPOINT phenotype does not improve correlation with symptom severity in men with chronic prostatitis/chronic pelvic pain syndrome. Urology 2011; 78: 653–8

NHS Choices. Map of Medicine. Prostatitis – Secondary Care, January 2014. Available at: http://healthguides.mapofmedicine.com/choices/pdf/prostatitis2.pdf. Accessed June 2014

Engel DE, Baranowski AP, Elnell S et al. Guidelines on Chronic Pelvic Pain. European Association of Urology, 2012. Available at: http://www.uroweb.org/gls/pdf/24_Chronic_Pelvic_Pain_LR%20II.pdf. Accessed June 2014

Lazaro N. Sexually Transmitted Infections in Primary Care. Royal College of General Practitioners, 2013. Available at: http://www.rccgp.org.uk/clinical-andresearch/clinicalresources/~/media/Files/CIRC/RCGP-Sexually-Transmitted-Infections-in-Primary-Care-2013.ashx. Accessed June 2014

Clemens QJ, Brown SO, Calhoun EA. Mental health diagnoses in patients with interstitial cystitis/painful bladder syndrome and chronic prostatitis/chronic pelvic pain syndrome: a case/control study. J Urol 2008; 180: 1378–82

Anderson RU, Orenberg EK, Chan CA, Morey A, Flores V. Psychometric profiles and hypothalamic-pituitary-adrenal axis function in men with chronic prostatitis/chronic pelvic pain syndrome. J Urol 2008; 179: 956–60

Ku JH, Jeon YS, Kim ME, Lee NK, Park YH. Psychological problems in young men with chronic prostatitis-like symptoms. Scand J Urol Nephrol 2002; 36: 296–301

Hedelin H. The chronic prostatitis/chronic pelvic pain syndrome and pain catastrophizing: a vicious combination. Scand J Urol Nephrol 2012; 46: 273–8

Murphy AB, Macejkio A, Taylor A, Nadler RB. Chronic prostatitis: management strategies. Drugs 2009; 69: 71–84

Weidner W, Anderson RU. Evaluation of acute and chronic bacterial prostatitis and diagnostic management of chronic prostatitis/chronic pelvic pain syndrome with special reference to infection/inflammation. Int J Antimicrob Agents 2008; 31(Suppl. 1): S91–5

Magri V, Cariani L, Bonamore R, Restelli A, Garlaschi MC, Trinchieri A. Microscopic and microbiological findings for evaluation of chronic prostatitis. Arch Ital Urol Androl 2005; 77: 135–8

Nickel JC, Downey J, Clark J et al. Levofloxacin for chronic prostatitis/chronic pelvic pain syndrome in men: a randomized placebo-controlled multicenter trial. Urology 2003; 62: 614–7

Burford D, Kirby M, Austoker J. Prostate Cancer Risk Management Programme information for primary care; PSA testing in asymptomatic men. Evidence document, 2010. Available at: http://www.cancerscreening.nhs.uk/prostate/pcrmp02.pdf. Accessed July 2014

Shoskes DA, Nickel JC, Rackley RR, Pontari MA. Clinical phenotyping in chronic prostatitis/chronic pelvic pain syndrome and interstitial cystitis: a management strategy for urologic chronic pelvic pain syndromes. Prostate Cancer Prostatic Dis 2009; 12: 177–83

Shoskes DA, Nickel JC, Kattan MW. Phenotypically directed multimodal therapy for chronic prostatitis/chronic pelvic pain syndrome: a prospective study using UPOINT. Urology 2010; 75: 1249–53

Hu JC, Link CL, McNaughton-Collins M, Barry MJ, McKinlay JB. The association of abuse and symptoms suggestive of chronic prostatitis/chronic pelvic pain syndrome: results from the Boston Area Community Health survey. J Gen Intern Med 2007; 22: 1532–7

Alexander BR, Propert KJ, Schaefeer AJ et al. Ciprofloxacin or tamsulosin in men with chronic prostatitis/chronic pelvic pain syndrome
Guidelines

54 Chen Y, Wu X, Liu J, Tang W, Zhao T, Zhang J. Effects of a 6-month course of tamsulosin for chronic prostatitis/chronic pelvic pain syndrome: a multicenter, randomized trial. World J Urol 2011; 29: 381–5

55 Nickel JC, Narayan P, McKay J, Doyle C. Treatment of chronic prostatitis/chronic pelvic pain syndrome with tamsulosin: a randomized double blind trial. J Urol 2004; 171: 1594–7

56 Mehik A, Alas P, Nickel JC, Sarpola A, Helstrom PJ. Alfuzosin treatment for chronic prostatitis/chronic pelvic pain syndrome: a prospective, randomized, double-blind, placebo-controlled, pilot study. Urology 2003; 62: 425–9

57 Nickel JC, Krieger JN, McNaughton-Collins M et al. Alfuzosin and symptoms of chronic prostatitis-chronic pelvic pain syndrome. N Engl J Med 2008; 359: 2663–73

58 Evliyaoğlu Y, Burgut R. Lower urinary tract symptoms, pain and quality of life assessment in chronic non-bacterial prostatitis patients treated with alpha-blocking agent doxazosin; versus placebo. Int Urol Nephrol 2002; 34: 351–6

59 Tuğcu V, Taşçı AI, Fazlioğlu A et al. A placebo-controlled comparison of the efficiency of triple- and monotherapy in category III B chronic pelvic pain syndrome (CPPS). Eur Urol 2007; 51: 1113–8

60 Cheah PY, Liang ML, Yuen KH et al. Initial, long-term, and durable responses to terazosin, placebo, or other therapies for chronic prostatitis/chronic pelvic pain syndrome. Urology 2004; 64: 881–6

61 Gül O, Eroğlu M, Ozok U. Use of terazosin in patients with chronic pelvic pain syndrome and evaluation by prostatitis symptom score index. Int Urol Nephrol 2001; 32: 433–6

62 Nickel JC, O’Leary MP, Lepor H et al. Silodosin for men with chronic prostatitis/chronic pelvic pain syndrome: results of a phase II multicenter, double-blind, placebo controlled study. J Urol 2011; 186: 125–31

63 Anothaisintawee T, Attia J, Nickel JC et al. Management of chronic prostatitis/chronic pelvic pain syndrome: a systematic review and network meta-analysis. JAMA 2011; 305: 78–86

64 Cohen JM, Fagin AP, Harlton E et al. Therapeutic intervention for chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS): a systematic review and meta-analysis. PLoS One 2012; 7: e19491

65 Bundrick W, Heron SP, Ray P et al. Levofloxacin versus ciprofloxacin in the treatment of chronic bacterial prostatitis: a randomized double-blind multicenter study. Urology 2003; 62: 537–41

66 Sker K, Schönwald S, Krhen I et al. Comparative analysis of azithromycin and ciprofloxacin in the treatment of chronic prostatitis caused by Chlamydia trachomatis. Int J Antimicrob Agents 2003; 21: 457–62

67 Zhang ZC, Jin FS, Liu DM, Shen ZJ, Sun YH, Guo YL. Safety and efficacy of levofloxacin versus ciprofloxacin for the treatment of chronic bacterial prostatitis in Chinese patients. Asian J Androl 2012; 14: 870–4

68 Sker K, Krhen I, Lisić M et al. Comparative randomized pilot study of azithromycin and doxycycline efficacy in the treatment of prostate infection caused by Chlamydia trachomatis. Int J Antimicrob Agents 2004; 24: 188–91

69 Sker K, Schönwald S, Krhen I et al. Comparative analysis of azithromycin and clarithromycin efficacy and tolerability in the treatment of chronic prostatitis caused by Chlamydia trachomatis. J Chemother 2002; 14: 384–9

70 Magri V, Montanari E, Sker K et al. Fluoroquinolone-macrolide combination therapy for chronic bacterial prostatitis: retrospective analysis of pathogen eradication rates, inflammatory findings and sexual dysfunction. Asian J Androl 2011; 13: 819–27

71 Magri V, Marras E, Sker V et al. Eradication of Chlamydia trachomatis parallels symptom regression in chronic bacterial prostatitis patients treated with a fluoroquinolone-macrolide combination. Andrologia 2010; 42: 366–75

72 Zhou Z, Hong L, Shen X et al. Detection of nanobacteria infection in type III prostatitis. Urology 2008; 71: 1091–5

73 Ye ZQ, Lan RZ, Yang WM, Yao LF, Yu X. Tamsulosin treatment of chronic non-bacterial prostatitis. J Int Med Res 2008; 36: 244–52

74 Kulovac B, Aganovic D, Prsic A, Hadzisimomovic O. Management of chronic nonbacterial prostatitis/chronic pelvic pain syndrome. BJU Basic Med Sci 2007; 7: 245–9

75 Nickel JC, Pontari M, Moon T et al. A randomized, placebo controlled, multicenter study to evaluate the safety and efficacy of rofecoxib in the treatment of chronic nonbacterial prostatitis. J Urol 2003; 169: 1401–5

76 Zhao WP, Zhang ZG, Li XD et al. Celecoxib reduces symptoms in men with difficult chronic pelvic pain syndrome (Category IIIA). Braz J Med Biol Res 2009; 42: 963–7

77 Lee CB, Ha US, Lee SJ, Kim SW, Cho YH. Preliminary experience with a terpene mixture versus ibuprofen for treatment of category III chronic prostatitis/chronic pelvic pain syndrome. World J Urol 2006; 24: 55–60

78 Pontari MA, Krieger JN, Litwin MS et al. Pregabalin for the treatment of men with chronic prostatitis/chronic pelvic pain syndrome: a randomized controlled trial. Arch Intern Med 2010; 170: 1586–93

79 Kaplan SA, Volpe MA, Te AE. A prospective, 1-year trial using saw palmetto versus finasteride in the treatment of category III prostatitis/chronic pelvic pain syndrome. J Urol 2004; 171: 284–8

80 Leskinen M, Lukanainen O, Marttila T. Effects of finasteride in patients with inflammatory chronic pelvic pain syndrome: a double-blind, placebo-controlled, pilot study. Urology 1999; 53: 502–5

81 Nickel JC, Downey J, Pontari MA, Shoskes DA, Zeitlin SI. A randomized placebo-controlled multicentre study to evaluate the safety and efficacy of finasteride for male chronic pelvic pain syndrome (category IIIA chronic nonbacterial prostatitis). BJU Int 2004; 93: 991–5

82 Nickel JC, Roehrborn C, Montorsi F, Wilson TH, Rittmaster RS. Dutasteride reduces prostatitis symptoms compared with placebo in men enrolled in the REDUCE study. J Urol 2011; 186: 1313–8

83 National Clinical Guideline Centre. The management of lower urinary tract symptoms in men. Methods, Evidence & Guidance. NCGC, 2010. Available at: http://www.nice.org.uk/guidance/cg97/resources/cg97-lower-urinary-tract-symptoms-fullguideline3. Accessed July 2014

84 Jeong CW, Lim DJ, Son H, Lee SE, Jeong H. Treatment for chronic prostatitis/chronic pelvic pain syndrome: levofloxacin, doxazosin and their combination. Urol Int 2008; 80: 157–61

85 Magri V, Trinchieri A, Pozzi G et al. Efficacy of repeated cycles of combination therapy for the eradication of infecting organisms in chronic bacterial prostatitis. Int J Antimicrob Agents 2007; 29: 549–56

86 Shoskes DA, Hakim L, Ghoniem G, Jackson CL. Long-term results of multimodal therapy for chronic prostatitis/chronic pelvic pain syndrome. J Urol 2003; 169: 1406–10

87 Clemens JQ, Nadler RB, Schaeffer AJ, Belani J, Albauh J, Bushman W. Biofeedback, pelvic floor re-education, and bladder training for male chronic pelvic pain syndrome. Urology 2000; 56: 951–5

88 Cornel EB, van Haarst EP, Schaarsberg RW, Geels J. The effect of biofeedback physical therapy in men with Chronic Pelvic Pain Syndrome Type III. Eur Urol 2005; 47: 607–11

89 He W, Chen M, Zu X, Li Y, Ning K, Qi L. Chronic prostatitis presenting with dysfunctional voiding and effects of pelvic floor biofeedback treatment. BJU Int 2010; 105: 975–7

90 Anderson RU, Wise D, Sawyer T, Chan C. Integration of myofascial trigger point release and paradoxical relaxation training treatment of chronic pelvic pain in men. J Urol 2005; 174: 155–60

91 Anderson RU, Wise D, Sawyer T, Glove P, Orenberg EK. 6-day intensive treatment protocol for refractory chronic prostatitis/chronic pelvic pain syndrome using myofascial release and paradoxical relaxation training. J Urol 2011; 185: 1294–9
92 Sikiri L, Shmaila H, Muhammed SA. Transcutaneous electrical nerve stimulation (TENS) in the symptomatic management of chronic prostatitis/chronic pelvic pain syndrome: a placebo-control randomized trial. Int Braz J Urol 2008; 34: 708–14
93 Chen R, Nickel JC. Acupuncture ameliorates symptoms in men with chronic prostatitis/chronic pelvic pain syndrome. Urology 2003; 61: 1156–9
94 Honjo H, Kamoi K, Naya Y et al. Effects of acupuncture for chronic pelvic pain syndrome with intrapelvic venous congestion: preliminary results. Int J Urol 2004; 11: 607–12
95 Tugcu V, Tas S, Eren G, Bedirhan B, Karadag S, Tasci A. Effectiveness of acupuncture in patients with category IIIIA prostatitis/chronic pelvic pain syndrome: a report of 97 patients. Pain Med 2010; 11: 518–23
96 Lee SW, Liong ML, Yuen KH et al. Acupuncture versus sham acupuncture for chronic prostatitis/chronic pelvic pain. Am J Med 2008; 121: 79 e1–7
97 Lee SH, Lee BC. Electroacupuncture relieves pain in men with chronic prostatitis/chronic pelvic pain syndrome: three-arm randomized trial. Urology 2009; 73: 1036–41
98 Lee SH, Lee BC. Use of acupuncture as a treatment method for chronic prostatitis/chronic pelvic pain syndromes. Curr Urol Rep 2011; 12: 288–96
99 Elist J. Effects of pollen extract preparation Prostat/Poltit on lower urinary tract symptoms in patients with chronic nonbacterial prostatitis/chronic pelvic pain syndrome: a randomized, double-blind, placebo-controlled study. Urology 2006; 67: 60–3
100 Shokes DA, Zeitlin SI, Shahed A, Rajfer J. Quercetin in men with category III chronic prostatitis: a preliminary prospective, double-blind, placebo-controlled trial. Urology 1999; 54: 960–3
101 Wagenlehner FM, Schneider H, Ludwig M, Schnitker J, Brahler E, Weidner W. A pollen extract (Cernilton) in patients with inflammatory chronic prostatitis-chronic pelvic pain syndrome: a multicenter, randomised, prospective, double-blind, placebo-controlled phase 3 study. Eur Urol 2009; 56: 544–51
102 Morgia G, Mucciardi G, Gali A et al. Treatment of chronic prostatitis/chronic pelvic pain syndrome category IIIA with Serenoa repens plus selenium and lycopene (Profluss) versus S. repens alone: an Italian randomized multicenter-controlled study. Urol Int 2010; 84: 400–6
103 Cai T, Mazzoli S, Bechi A et al. Serenoa repens associated with Urtica dioica (ProstaMEV) and curcumin and quercitin (FlogMEV) extracts are able to improve the efficacy of fluflaxilox in bacterial prostatitis patients: results from a prospective randomised study. Int J Antimicrob Agents 2009; 33: 549–53
104 Chiang PH, Chiang CP. Therapeutic effect of transurethral needle ablation in non-bacterial prostatitis: chronic pelvic pain syndrome type IIIa. Int J Urology 2004; 11: 97–102
105 Kastner C, Hochreiter W, Huidobro C, Cabezás J, Miller P. Cooled transurethral microwave thermotherapy for intractable chronic prostatitis–results of a pilot study after 1 year. Urology 2004; 64: 1149–54
106 Mishra VC, Browne J, Emberton M. Role of repeated prostatic massage in chronic prostatitis: a systematic review of the literature. Urology 2008; 72: 731–5
107 Ateya A, Fayez A, Hani R, Zohdy W, Gabbar MA, Shamloul R. Evaluation of prostatic massage in treatment of chronic prostatitis. Urology 2006; 67: 674–8
108 Kabay S, Kabay SC, Yucel M, Ozden H. Efficiency of posterior tibial nerve stimulation in category IIIB chronic prostatitis/chronic pelvic pain: a Sham-Controlled Comparative Study. Urol Int 2009; 83: 33–8
109 Joint Formulary Committee. British National Formulary (BNF) 67. London: British Medical Association and Royal Pharmaceutical Society of Great Britain, Pharmaceutical Press, 2014
110 Aboumarzouk OM, Nelson RL. Pregabalin for chronic prostatitis. Cochrane Database Syst Rev 2012; 8: CD009063
111 National Institute for Health and Care Excellence. Neuropathic pain – pharmacological management: The pharmacological management of neuropathic pain in adults in non-specialist settings. NICE CG 173. NICE, 2013. Available at: http://www.nice.org.uk/guidance/cg173/resources/guidance-neuropathic-pain-pharmacological-management-pdf. Accessed July 2014
112 Prostate Cancer UK. Understanding the PSA test: A guide for men concerned about prostate cancer. 2014. Available at: http://prostatecanceruk.org/media/41628/2782-understanding-psa-test.pdf. Accessed April 2015.

Correspondence: Jon Rees, Brockway Medical Centre, 8 Brockway, Nailsea, North Somerset BS48 1BZ, UK. e-mail: drjonrees@gmail.com

Abbreviations: BOO, bladder outlet obstruction; BPE, benign prostatic enlargement; BSSM, British Society for Sexual Medicine; CBP, chronic bacterial prostatitis; CBT, Cognitive behavioural therapy; CP/CPPS, chronic prostatitis/chronic pelvic pain syndrome; DRE, digital rectal examination; EAU, European Association of Urology; ED, erectile dysfunction; EPS, expressed prostatic secretions; GAD-7, Generalised Anxiety Disorder–7; IBS, irritable bowel syndrome; HIFU, high-intensity focused ultrasound; IIEF-5, International Index of Erectile Function; LUTS, lower urinary tract symptoms; MDT, multidisciplinary team; MRI, magnetic resonance imaging; MSU, midstream urine; NAATs, nucleic acid amplification tests; NICE, National Institute for Health and Care Excellence; NIH, National Institutes of Health (USA); NIH-CPSI, NIH Chronic Prostatitis Symptom Index; NSAID, non-steroidal anti-inflammatory drugs; OCEBM, Oxford Centre for Evidence-based Medicine; PDE5, phosphodiesterase type 5; PERG, Prostatitis Expert Reference Group; PHQ, Patient Health Questionnaire; QoL, quality of life; PSA, prostate specific antigen; RCT, randomised controlled trial; SHIM, Sexual Health Inventory for Men; SNRI, serotonin-norepinephrine reuptake inhibitor; STI, sexually transmitted infection; TENS, transcutaneous electrical nerve stimulation; TUNA, transurethral needle ablation; TURP, transurethral resection of the prostate; UPOINT, Urinary, Psychosocial, Organ-specific, Infection, Neurological/ systemic, and Tenderness; UTI, urinary tract infection; VB, voided bladder.

Supporting Information

Additional Supporting Information may be found in the online version of this article:
Appendix S1 Prostatitis Expert Reference Group Members.
Appendix S2 Guidelines and patient information.
Appendix S3 Literature review protocol.
Appendix S4 Chronic prostatitis/chronic pelvic pain Delphi survey.