



Health

Evidence for ultrasound-guided injections for Greater Trochanteric Pain Syndrome (GTPS)

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Summary:

Greater trochanteric pain syndrome (GTPS) is a regional pain syndrome in which chronic intermittent pain around the greater trochanter. The term 'trochanteric bursitis' was previously used for what is now known as 'greater trochanteric pain syndrome'.

NICE CKS recommends a peri-trochanteric corticosteroid injection and referral to physiotherapy if conservative measures fail to improve symptoms adequately. Platelet-rich plasma (PRP) injections are also used as conservative treatment interventions for GTPS.

Systematic review evidence suggests that PRP may provide short-term (1-3 months) pain relief, and structured exercise leads to short-term (1-3 months) improvements in functional outcomes. Injections can be done in primary care or at a musculoskeletal clinic alongside physiotherapy or secondary care. Joint injections are generally guided by surface anatomy. However, there is a lack of evidence of the effectiveness of using ultrasound-guided joint injections.

Ultrasound guidance is not normally funded in the NHS to guide injections for GTPS. Evidence shows that it is more expensive and less cost-effective. Therefore, ultrasound guidance for GTPS is rated as an Amber unproven treatment that has met the standards of evidence set for safety but not efficacy. Anatomic landmark-guided injection remains the method of choice, and patients should be informed of the short-term benefits of injections as the evidence from a Systematic Review and Network Meta-Analysis show no therapy significantly outperforms the no-treatment control group for pain scores at 6 to 12 months.

Technology	Rating	Summary conclusion
AXA 34: Evidence for ultrasound-guided injections of Greater trochanteric pain syndrome (GTPS)	Amber	Ultrasound image-guided joint injections for greater trochanteric pain syndrome (GTPS) is an unproven treatment that is more expensive and less cost-effective and should only be undertaken in the context of research.

Background

The term greater trochanteric pain syndrome (GTPS) encompasses multiple diagnoses, including external snapping hip (coxa saltans), proximal iliotibial band syndrome, trochanteric bursitis, and GMed and/or GMin tendinopathy or tearing.

GTPS is a regional pain syndrome in which chronic intermittent pain is felt around the greater trochanter. The term 'trochanteric bursitis' was previously used for what is now known as 'greater trochanteric pain syndrome'. GTPS is preferred as the trochanteric bursae play a smaller role in the problem than previously thought, and inflammation is not always present. ¹

Corticosteroids and platelet-rich plasma (PRP) injections are widely used conservative treatment interventions for GTPS to reduce pain and improve function.

CKS recommends if conservative measures fail to provide adequate improvement in symptoms, they consider offering a peri-trochanteric corticosteroid injection and referral to physiotherapy.

These injections can be undertaken guided by surface anatomy or ultrasound. However, there is uncertainty over the benefit of guided injections and their cost-effectiveness.

Questions:

Does guiding injections (corticosteroid or other) to treat trochanteric bursitis or greater trochanteric pain syndrome lead to clinically significantly better outcomes than anatomically guided or blind injections, and if so, do these better outcomes justify higher cost? Does the injected substance (e.g. platelet-rich plasma; other autologous blood products) impact whether the injection should be guided?

We split this question into three parts

- Q1: What injectables will likely improve trochanteric bursitis or greater trochanteric pain syndrome?'

- Q2: Does guiding injections (corticosteroid or other) to treat trochanteric bursitis or greater trochanteric pain syndrome lead to clinically significantly better outcomes than anatomically guided or blind injections and...
- Q3: if so, do these better outcomes justify higher cost?

Injection Compounds:

The most common injection compounds are corticosteroids, but other drugs, including platelet-rich plasma, have been used. Sometimes injections are used in combination; e.g., corticosteroid type and a local anaesthetic such as lidocaine.

Methods

AXA Health's approach involves learning, adapting, and improving care using high-quality, evidence-based strategies. To achieve this, AXA developed a traffic light system to assess the evidence for developing treatments to identify which treatments are safe and effective. Combining evidence from NICE guidance, Systematic Reviews, and Randomised Controlled Trials generates traffic light ratings.

The following definitions are used in the traffic light system:

Green: Conventional Treatments* that have met the standards of evidence we've set for safety and efficacy.

Amber: Unproven Treatments that have met the standards of evidence we've set for safety but not efficacy.

Red: Unproven Treatments* that have not met the standards of evidence we've set for safety.

Search Strategy

The following databases were searched: the Trip Database (www.tripdatabase.com) - which searches the primary higher-level evidence sources, e.g., NICE, AHRQ, Cochrane etc.; PubMed (<https://pubmed.ncbi.nlm.nih.gov/>) - covers the leading journal articles and Google - used for general searching and to look for specific documents from the FDA, Aetna, NHS etc.

Analysis

Each piece of evidence retrieved is subjected to an assessment of its quality and the overall effect. Based on this evidence, an overall conclusion is reached, and a traffic light rating is awarded where appropriate. This evidence is then shared with key stakeholders for critical feedback.

Results of the Evidence Review

Q1: What injectables are likely to improve trochanteric bursitis or greater trochanteric pain syndrome?

Guidelines

CKS [Greater trochanteric pain syndrome](#) recommends that if conservative measures fail to improve symptoms adequately, consider offering a peri-trochanteric corticosteroid injection and referral to physiotherapy.

- ❖ Peri-trochanteric injections may be done in primary care with sufficient training and expertise or at a musculoskeletal clinic alongside physiotherapy. If this is not available, refer to a rheumatologist or orthopaedic surgeon.
- ❖ Physical therapy may include quadriceps strengthening, ilio band stretching, or hip abduction exercises to strengthen and stretch the gluteus medius and minimus.

These recommendations are based on the British Orthopaedic Association (BOA) Commissioning guide: pain arising from the hip in adults; ² and low-quality expert opinion from narrative reviews [Mallow, 2014], ³ that includes:

- An approach to hip pain in a young adult [Dick, 2018], ⁴
- Chronic hip pain in adults: current knowledge and future prospective [Ahuja, 2020], ⁵
Greater trochanteric pain syndrome: a review of diagnosis and management in general practice [Speers, 2017], ⁶
- A systematic review of the management of greater trochanteric pain syndrome: a systematic review [Reid, 2016]. ⁷

[The 2022 International Society for Hip Preservation \(ISHA\) physiotherapy agreement on assessment and treatment of greater trochanteric pain syndrome \(GTPS\): an international consensus statement](#) ⁸ includes a section ‘Should pharmacologic agents be utilised in the setting of GTPS?’

- Consensus statement: The term greater trochanteric pain syndrome (GTPS) encompasses multiple diagnoses, including external snapping hip (coxa saltans), proximal iliotibial band syndrome, trochanteric bursitis, and GMed and/or GMin tendinopathy or tearing.
- CSIs and platelet-rich plasma (PRP) injections are widely used conservative treatment interventions for GTPS. CSIs are primarily used to reduce pain and improve function. Lievens et al. ⁹
- The indications for the use of pharmacological agents will depend on patient demographics, history, and physician-preferred practice patterns.

We found two interventional procedure guidance papers from NICE for refractory GTPS for extracorporeal Shock Wave Therapy, ¹⁰ and distal tibial band lengthening. ¹¹

Systematic Reviews

Non-Operative Treatments

A Systematic Review and Network Meta-Analysis of Randomized Controlled Trials of the [Comparative Efficacy of Nonoperative Treatments for Greater Trochanteric Pain Syndrome](#) included randomised controlled trials (n=1034 patients). ¹²

The evidence suggests that PRP and shockwave therapy may provide short-term (1-3 months) pain relief, and structured exercise leads to short-term (1-3 months) improvements in functional outcomes.

No therapy significantly outperformed the no-treatment control group for pain scores at 6 to 12 months. Structured exercise had the highest probability of being the best treatment for improved functional outcomes. It was the only treatment that significantly improved functional outcome scores compared with the no-treatment arm at 1 to 3 months.

Corticosteroids

2022: [The effect of corticosteroid injection in the treatment of greater trochanter pain syndrome: a systematic review and meta-analysis of randomized controlled trials.](#)¹³

This review included 8 RCTs, covering 764 patients. It concluded that due to the small sample size and lack of sufficient clinical studies, the current evidence is equivocal regarding the efficacy of CSI in the treatment of GTPS.

2021: [Corticosteroid injection for greater trochanteric pain syndrome: a systematic review](#) ¹⁴ concludes that corticosteroid injection may be helpful in short-term treatment for GTPS and that landmark-guided techniques are sufficient. Future high-quality placebo-controlled trials with established diagnostic criteria are necessary to determine the role of corticosteroid injection in GTPS.

Platelet-rich plasma

2021: [Platelet-rich plasma versus steroids injections for greater trochanter pain syndrome: a systematic review and meta-analysis.](#) ¹⁵

This review included 7 RCTs and concluded the effects of PRP on the outcomes of GTPS patients as measured by the HHS appear to be greater and longer lasting than those of patients receiving injections of CSI. However, differences are small and are not consistently replicated by other outcome scores such as VAS.

Q2: Does guiding injections (corticosteroid or other) to treat trochanteric bursitis or greater trochanteric pain syndrome lead to clinically significantly better outcomes than anatomically guided or blind injections and,

2009: [Comparison of fluoroscopically guided and blind corticosteroid injections for greater trochanteric pain syndrome:](#) multicentre randomised controlled trial. ¹⁶

The interventions involved injection of a corticosteroid and local anaesthetic into the trochanteric bursa, using fluoroscopy (n=32) or landmarks (that is, “blind” injections; n=33) for guidance.

Fluoroscopy is a type of medical imaging that shows a continuous X-ray image on a monitor, much like an X-ray movie.

The results showed no differences in outcomes favouring the fluoroscopy or blind treatment groups. Three months after the injection, 15 (47%) patients in the blind group and 13 (41%) in the fluoroscopy group continued to have a positive outcome.

The study concluded that fluoroscopic guidance dramatically increased treatment costs for greater trochanteric pain syndrome but did not improve outcomes.

Q3: If so, do these better outcomes justify higher costs?

NHS Commissioning

2021: [Thames Valley Priorities Committee Commissioning Policy Statement](#) ¹⁷ reports:

“Ultrasound (US) guidance is not normally funded to guide injections for GTPS.

The US-guided injection can only be considered in refractory cases where the diagnosis is uncertain, and 2 to 3 landmark-guided injections have failed to relieve symptoms.

Consensus Study

2022 [Clinical indications for image-guided interventional procedures in the musculoskeletal system: a Delphi-based consensus paper from the European Society of Musculoskeletal Radiology \(ESSR\)—part IV, hip](#) ¹⁸

Conclusion “This work highlighted that there is still low evidence in the existing literature on some of these interventional procedures. Further large prospective randomised trials are essential to better confirm the benefits and objectively clarify the role of imaging to guide musculoskeletal interventional procedures around the hip.”

We found several studies on this topic:

2018: [Outcomes and cost-effectiveness of ultrasound-guided injection of the trochanteric bursa.](#) ¹⁹

Forty patients were randomised to injection with 5 ml of 1% lidocaine and 80 mg of methylprednisolone using conventional anatomic landmark palpation guidance or US guidance.

The authors concluded that US guidance is more expensive and less cost-effective. Anatomic landmark-guided injection remains the method of choice. The authors consider that US guidance might be reserved for extreme obesity or injection failure.

2022: [EULAR points to consider for the use of imaging to guide interventional procedures in patients with rheumatic and musculoskeletal diseases.](#) ²⁰ While not specific to trochanteric injections, it does report that studies on costs of imaging-guided interventions at peripheral joints are available only for the USA reporting large differences in costs depending on the setting and reimbursement policies of individual insurance companies. Whether imaging-guided interventions are cost-effective is unclear.

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