Treatment of Lateral Epicondylitis with Autologous Blood, Platelet-Rich Plasma, or Corticosteroid Injections: A Systematic Review of Overlapping Meta-analyses

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Introduction

- Previous meta-analyses have been conducted to compare outcomes of treatment injections for lateral epicondylitis (LE)
  - Corticosteroid injections (CSI) improve pain and elbow function in short-term
  - Autologous blood products (ABP), such as autologous blood (AB), and platelet-rich plasma (PRP) may provide the most functional improvement in the intermediate-term
To conduct a systematic review of overlapping meta-analyses comparing different injection treatments (CSI, AB, PRP) for LE to determine which meta-analyses provide the best available evidence.
Methods

- Systematic review using PRISMA guidelines
- Included meta-analyses which compared clinical outcomes of CSI, AB, and PRP for the treatment of LE
- Results were reviewed by 2 independent reviewers to determine study eligibility
- Patient outcomes were extracted from these meta-analyses
- Meta-analysis quality was assessed using the Oxman-Guyatt and Quality of Reporting Meta-analyses (QUOROM) systems
- The Jadad decision algorithm was then used to determine which meta-analyses provided the best level of evidence
Results

- 9 meta-analyses with 8,656 patients
- Seven meta-analyses found that ABP significantly improve pain and elbow function in the intermediate-term (12-26 weeks).
- Four studies demonstrated CSI would effectively relieve pain and improve function in the short-term (<12 weeks)
Arirachakarn et al in 2016 = highest quality study and best level of evidence
Arirachakarn et al found that both PRP and AB are superior to CSI both within and after 2 months.

Lower quality meta-analyses indicate that dosage, injection number, and follow-up period may be essential factors in determining the appropriate LE treatment injection protocol.
ABP (i.e. AB and PRP) were the most effective treatment → intermediate term (12-26 weeks)
- Pain relief, elbow function
- The lack of a significant short-term effect with injection of ABP could represent the time-period needed for proper tendon tissue regeneration

CSI was an effective treatment → short-term (<12 weeks)
- Pain relief, elbow function
- The high recurrence rate of CSI should be taken into consideration (37% at 6 months, 72% at 6 weeks [Qian et al, 2016].
Conclusions

- The current best-available evidence suggests that:
  - CSI improves functional outcomes and pain relief in the short-term
  - AB and PRP are the most effective treatment options in the intermediate-term
- Despite lacking significant support, the results of this review indicate that:
  - Dosage, number of injections, and combination of various treatment injections may be critical factors and dependent variables in determining the success of CSI, AB, and PRP
  - A more detailed evaluation and longer follow-up is needed to determine the appropriate LE injection protocol
References

- Jadad AR, Cook DJ, Browman GP. A guide to interpreting discordant systematic reviews. CMAJ. 1997;156(10):1411-1416. PMID: 9164400
Thank You

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