Maine Medical Center
Department of Emergency Medicine
Journal Club Summary Template

Article Citation: Williams CM, Maher CG, Latimer J, et al. Efficacy of paracetamol for acute low-back pain: a double-blind, randomised controlled trial. Lancet. 2014;384(9954):1586-96.
Country(ies): Australia
Funding Source(s): National Health and Medical Research Council of Australia and GlaxoSmithKline Australia (supplemental funding + paracetamol and matched placebo) None Stated

Date: 10/19/2017	**Presenter Name:** Jason Block, MD

Purpose
Research Question(s): Does paracetamol taken regularly or as needed improve time to recovery from pain, compared with placebo, in patients with low back pain? None Stated
Hypotheses: X None Stated
Study Purpose: Paracetamol is part of the routine recommendations for acute low back pain with no red flag symptoms, but there is no high-quality evidence to support this.

Methods
Study Design: Multicenter, double-blinded, randomised, placebo controlled

Outcome(s) ***[or Dependent Variable]:***
Primary: Recovery from low back pain (pain score of 0-1) sustained for 7 days
Secondary: pain intensity, disability, function, global ratio of symptom change, sleep quality, quality of life
Process: adherences to drug; concomitant treatment use and work absenteeism; adverse events; treatment satisfaction, patient masking

Intervention ***[or Independent Variable]:***
Scheduled paracetamol vs. PRN paracetamol vs. placebo

Ethics Review: IRB Review IACUC Review Other: **Sydney Human Research Ethics Committee**

Research Setting:
235 primary care centers in Sydney, Australia

Study Subjects:
New onset low back pain (12th rib and buttock crease)

Inclusion Criteria:
<6 weeks duration, preceded by 1 month of no pain, with or without leg pain, and moderate-intensity pain

Exclusion Criteria:
Suspected serious spinal pathology (cancer, fracture, infection), current use of full, regular recommended doses of an analgesic; spinal surgery in preceding 6 months; contraindication to paracetamol, use of psychotropic drugs for a disorder judged to prevent reliable recording of study information; pregnant

Study Interventions:
Scheduled vs. as-needed vs. placebo paracetamol

Study Groups:
1. Paracetamol 2x 665mg q6-8 hours + Placebo as needed x 4 weeks
2. Placebo q6-8 hours + 1-2x 500mg Paracetamol as needed every 4-6 hours x 4 weeks
3. Placebo scheduled + Placebo as needed x4 weeks

Instruments/Measures Used:
Symptom:
Participant recording measures (pain scores and drug diary) into booklet
Roland Morris 24 scale (disability)
Patient Specific Functional Scale (function)
Pittsburgh Sleep Quality Index (sleep)
Short Form 12 (quality of life)
Process:
Brief Adherence Rating Scale (adherence)
Credibility Expectancy Questionnaire (credibility and expectation)
Direct questioning at 12 week follow-up for masking, satisfaction, need for rescue medication (1, 4, 12 week follow-up)

Data Collection: Recorded by participants and transcribed into a form over the telephone or transcribed directly into an online database by the participant.

Data Analysis:
***A priori* sample size calculation?** **Yes** No Not Described N/A
Statistical analyses used: Cox proportional-hazard model, Wald test, Lontgitutdinal mixed models, log-binomial regression for categorical outcome (sleep), Fisher exact test
Adjustment for potential confounders? Yes No Not Described N/A
If yes, list:

Results

Study participants:
1643 patients with new onset low back pain (12th rib and buttock crease) - 97% analyzed
Mean age 45, 53% male, mean intensity 6.3/10 (SD 1.8),
550 to regular group, 546 to as-needed group, 547 to placebo group

Brief answers to research questions *[key findings]:*
1. Median days to recovery (regular - 17, as needed - 17, placebo - 16) - p=.79, See Kaplan-Meier
2. % recovery at 12 weeks (regular - 85%, as needed - 83%, placebo - 84%) - not significant
3. Secondary outcomes - no difference for any secondary outcome (pain intensity, disability, function, global ratio of symptom change, sleep quality, quality of life)

Additional findings:
Post-Hoc analysis to assess efficacy of paracetamol in early phase with pain scores up to day 14 - no treatment effect was identified

Limitations:
Mediocre adherence - Median intake was 2660 mg/day (recommended 4000mg/day).
How severe was this back pain? - no-one required time off of work
Did only 1% of subjects actually take naproxen?

Clinical Implications

Applicable? Yes
Feasible? Yes
Clinically relevant? Yes

Comments: APAP is a low-risk intervention, but should not be routinely recommended. New numbers to quote patients including 50% at 2 weeks and 85% will get better in 12 weeks with no intervention. Recommend activity.

Level of evidence generated from this study

Ia: evidence obtained from meta-analysis of randomized controlled trials
Ib: evidence obtained from at least one randomized controlled trial
IIa: evidence obtained from at least one well-designed, controlled study without randomization
IIb: evidence obtained from at least one other type of well-designed quasi-experimental study
III: evidence obtained from a well-designed, non-experimental study
IV: expert committee reports; expert opinion; case study; case report

Additional Comments/Discussion/Notes

No comparison to no treatment (no placebo). Does simply taking a pill increase your recovery rate? - May be the case since recovery rates in this trial (85% at 12 weeks) were more rapid than in previous trials. This hypothesis is disputed by a small study, n=46, with APAP vs. no treatment and no difference identified (Milgrom et al 1993).