Best Evidence from the Cochrane Library

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Different Antibiotic Treatments for Group 'A' Streptococcal Pharyngitis

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Objectives
We assessed the comparative efficacy of different antibiotics on clinical outcomes, relapse, complications and adverse events in group 'A beta-hemolytic streptococci' (GABHS) tonsillopharyngitis.

Search Strategy
We searched The Cochrane Library, Cochrane Central Register of Controlled Trials (CENTRAL 2010, Issue 3) which includes the Acute Respiratory Infections Group's Specialized Register, MEDLINE (1966 to July Week 4, 2010) and EMBASE (1974 to August 2010).

Selection Criteria
Randomised, double-blind trials comparing different antibiotics reporting at least one of the following: clinical cure, clinical relapse, complications, adverse events.

Main Results
Seventeen trials (5352 participants) were included; 16 compared with penicillin (six with cephalosporins, six with macrolides, three with carbacephem and one with sulfonamides), one trial compared clindamycin and ampicillin. Randomization reporting, allocation concealment and blinding were poor.

There was no difference in symptom resolution between cephalosporins and penicillin (intention-to-treat (ITT) analysis; N = 5; n = 2018; odds ratio for absence of resolution of symptoms (OR) 0.79, 95% confidence interval (CI) 0.55 to 1.12). Clinical relapse was lower with cephalosporins (N = 4; n = 1386; OR 0.55, 95% CI 0.31 to 0.99); overall number needed to treat to benefit (NNTB) 50), but found only in adults (OR 0.42, 95% CI 0.20 to 0.88; NNTB 33). There were no differences between macrolides and penicillin. Carbacephem showed better symptom resolution post-treatment (N = 3; n = 795; OR 0.70, 95% CI 0.49 to 0.99; NNTB 14), but only in children (N = 2; n = 233; OR 0.57, 95% CI 0.33 to 0.99; NNTB 8.3). Children experienced more adverse events with macrolides (N = 1, n = 489; OR 2.33; 95% CI 1.06 to 5.15).

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Conclusions

Evidence is insufficient for clinically meaningful differences between antibiotics for GABHS tonsillopharyngitis. Limited evidence in adults suggests cephalosporins are more effective than penicillin for relapse, but the NNTB is high. Limited evidence in children suggests carbacephem is more effective for symptom resolution. Data on complications are too scarce to draw conclusions. Based on these results and considering the low cost and absence of resistance, penicillin can still be recommended as first choice.

Effects of Communicating DNA-Based Disease Risk Estimates on Risk-Reducing Behaviors

Marteau TM, French DP, Griffin SJ, Prevost AT, Sutton S, Watkinson C, Attwood S, Hollands GJ

Objectives

To assess the effects of communicating DNA-based disease risk estimates on risk-reducing behaviors and motivation to undertake such behaviors.

Search Strategy

We searched the following databases using keywords and medical subject headings: Cochrane Central Register of Controlled Trials (CENTRAL, The Cochrane Library, 2010 Issue 4), MEDLINE (1950 to April 2010), EMBASE (1980 to April 2010), PsycINFO (1985 to April 2010) using OVID SP, and CINAHL (EBSCO) (1982 to April 2010). We also searched reference lists, conducted forward citation searches of potentially eligible articles and contacted authors of relevant studies for suggestions. There were no language restrictions. Unpublished or in press articles were eligible for inclusion.

Selection Criteria

Randomised or quasi-randomised controlled trials involving adults (aged 18 years and over) in which one group received actual (clinical studies) or imagined (analogue studies) personalized DNA-based disease risk estimates for diseases for which the risk could plausibly be reduced by behavioral change. Eligible studies had to include a primary outcome measure of risk-reducing behavior or motivation (e.g. intention) to alter such behavior.

Main results

We examined 5384 abstracts and identified 21 studies as potentially eligible. Following a full text analysis, we included 14 papers reporting results of 7 clinical studies (2 papers report on the same trial) and 6 analogue studies.

Of the seven clinical studies, five assessed smoking cessation. Meta-analyses revealed no statistically significant effects on either short-term (less than 6 months) smoking cessation (OR 1.35, 95% CI 0.76 to 2.39, P = 0.31, n = 3 studies) or cessation after six months (OR 1.07, 95% CI 0.64 to 1.78, P = 0.80, n = 4 studies). Two clinical studies assessed diet and found effects that significantly favored DNA-based risk estimates (OR 2.24, 95% CI 1.17 to 4.27, P = 0.01). No statistically significant effects were found in the two studies assessing physical activity (OR 1.03, 95% CI 0.59 to 1.80, P = 0.92) or the one study assessing

medication or vitamin use aimed at reducing disease risks (OR 1.26, 95% CI 0.58 to 2.72, P = 0.56).

For the six non-clinical analogue studies, meta-analysis revealed a statistically significant effect of DNA-based risk on intention to change behavior (SMD 0.16, 95% CI 0.04 to 0.29, P = 0.0).

There was no evidence that communicating DNA-based disease risk estimates had any unintended adverse effects. Two studies that assessed fear arousal immediately after the presentation of risk information did, however, report greater fear arousal in the DNA-based disease risk estimate groups compared to comparison groups.

The quality of included studies was generally poor. None of the clinical or analogue studies was considered to have a low risk of bias.

Conclusions
Claims that receiving DNA-based test results motivates people to change their behavior are not supported by evidence. Larger and better-quality RCTs are needed.

Finasteride for Benign Prostatic Hyperplasia

Tacklind J, Fink HA, MacDonald R, Rutks I, Wilt TJ

Objectives
To compare the clinical effectiveness and harms of finasteride versus placebo and active controls in the treatment of lower urinary tract symptoms (LUTS).

Search Strategy
We searched The Cochrane Library (which includes CDSR (Cochrane Database of Systematic Reviews), DARE (Database of Abstracts of Reviews of Effects), HTA (Heath Technology Assessments), and CENTRAL (Cochrane Central Register of Controlled Trials, and which includes EMBASE and MEDLINE), LILACS (Latin American and Caribbean Center on Health Sciences Information) and Google Scholar for randomized, controlled trials (RCTs). We also hand searched systematic reviews, references, and clinical-practice guidelines.

Selection Criteria
Randomized trials in the English language with placebo and/or active arms with duration of at least 6 months were included.

Main Results
Finasteride consistently improved urinary symptom scores more than placebo in trials of > 1 year duration, and significantly lowered the risk of BPH progression (acute urinary retention, risk of surgical intervention, ≥ 4 point increase in the AUASI/IPSS). In comparison to alpha-blocker monotherapy, finasteride was less effective than either doxazosin or terazosin, but equally effective compared to tamsulosin. Both doxazosin and terazosin were significantly more likely than finasteride to improve peak urine flow and nocturia compared to finasteride. However, finasteride was associated with a lower risk of surgical intervention compared to doxazosin, but not to terazosin, while finasteride and doxazosin were no different for risk of acute urinary retention. Two small trials reported no

difference in urinary symptom scores between finasteride and tamsulosin. Finasteride + doxazosin and doxazosin monotherapy improved urinary symptoms equally well (≥ 4 point improvement).

Finasteride increases the risk of ejaculation disorder, impotence, and lowered libido compared to placebo. Compared to doxazosin, finasteride had a lower risk of asthenia, dizziness, and postural hypotension and compared to terazosin, it had a significant lower risk of asthenia, dizziness and postural hypotension.

Conclusions
Finasteride improves long-term urinary symptoms compared to placebo, but is less effective than doxazosin. Long-term combination therapy with alpha blockers (doxazosin, terazosin) improves symptoms significantly better than finasteride monotherapy. Finasteride + doxazosin improve symptoms compared to doxazosin alone. In comparison to doxazosin, finasteride + doxazosin appears to improve urinary symptoms only in men with medium (25 to < 40 mL) or large prostates (≥ 40 mL), but not in men with small prostates (25 mL).

Finasteride drug-related adverse effects are as follows: increased risk of impotence, erectile dysfunction, decreased libido and ejaculation disorder. Finasteride significantly reduces asthenia, postural hypotension, and dizziness compared to terazosin.

Surgery for Shoulder Osteoarthritis

Singh JA, Sperling J, Buchbinder R, McMaken K

Objectives
To determine the benefit and harm of surgery in patients with osteoarthritis of the shoulder, confirmed on X-ray, who do not respond to analgesics and NSAIDs.

Search Strategy
We searched: The Cochrane Central Register of Controlled Trials (CENTRAL), via The Cochrane Library; OVID MEDLINE; CINAHL (via EBSCOHost); OVID SPORTdiscus; EMBASE; and Science Citation Index (Web of Science).

Selection Criteria
All randomized clinical trials (RCTs) or quasi-randomized trials including adults with osteoarthritis of the shoulder joint (PICO- patients) comparing surgical techniques (total shoulder arthroplasty, hemiarthroplasty, implant types and fixation- intervention) compared to placebo or sham surgery, non-surgical modalities, no treatment, or comparison of one type of surgical technique to another (comparison) with patient-reported outcomes (pain, function, quality of life etc.) or revision rates (outcome).

Main Results
Seven studies (238 patients) were included for analyses. None of the studies compared shoulder surgery to sham surgery, non-surgical modalities or placebo. Two studies compared hemiarthroplasty to total shoulder arthroplasty; three compared keeled and pegged humeral components; and one each compared navigation surgery to conventional and all-polyethylene to metal-backed implant. Two studies (88 patients) compared hemiarthroplasty

to total shoulder arthroplasty. Patients who underwent hemiarthroplasty had statistically significantly worse functional scores on American Shoulder and Elbow Surgeons Shoulder Scale (100 point scale; higher = better) at 24 to 34 month follow-up compared to those who underwent total shoulder arthroplasty (mean difference, -10.05; 95% CI, -18.97 to -1.13; 2 studies, 88 patients), but no statistically significant differences between hemiarthroplasty and TSA were noted for pain scores (mean difference, 7.8; 95% CI, -5.33 to 20.93; 1 study, 41 patients), quality of life on short-form 36 physical component summary (mean difference, 0.80; 95% CI, -6.63 to 8.23; 1 study, 41 patients) and adverse events (Risk ratio, 1.19; 95% CI, 0.37 to 3.81; 1 study, 41 patients), respectively. A non-statistically significant trend towards higher revision rate in hemiarthroplasty compared to total shoulder arthroplasty was noted (Risk ratio, 6.18; 95% CI, 0.77 to 49.52; 2 studies, 88 patients; P = 0.09).

Conclusions

Total shoulder arthroplasty seems to offer an advantage in terms of shoulder function, with no other clinical benefits over hemiarthroplasty. More studies are needed to compare clinical outcomes of surgery using different components and techniques in patients with osteoarthritis of the shoulder. There is a need for studies comparing shoulder surgery to sham, placebo and other non-surgical treatment options.

Pharmacological Interventions for Pain in Patients with Temporomandibular Disorders

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Objectives

To assess the effectiveness of pharmacological interventions alone and in combination with non-pharmacological therapy in relieving pain in patients with chronic TMD.

Search Strategy

Electronic searches of the Cochrane Oral Health Group's Trials Register (2 August 2010), CENTRAL (The Cochrane Library 2010, Issue 3), MEDLINE via OVID (1950 to 2 August 2010), EMBASE via OVID (1980 to 2 August 2010) and CINAHL via EBSCO (1981 to 2 August 2010) were conducted. Reference lists of articles and previous reviews were scanned for relevant articles and authors were contacted for further information where appropriate.

Selection Criteria

Randomised controlled trials (RCTs) in which a pharmacological agent was compared with placebo for the management of pain in patients with TMD. Parenteral routes of administration were excluded.

Main Results

Eleven studies were included with 496 participants. The primary outcome of most of the studies was pain. The risk of bias in the included studies was variable. Whilst four studies showed significant pain relief for the active treatment, three were of poor quality. Most adverse effects were mild to moderate in severity. Four studies reported withdrawals due to severe adverse reactions, but insufficient information was provided regarding the trial groups from which the withdrawals occurred. No meta-analysis was conducted due to lack of similarities across the included studies.

Conclusions

There is insufficient evidence to support or not support the effectiveness of the reported drugs for the management of pain due to TMD. There is a need for high quality RCTs to evaluate the effectiveness of pharmacological relieve of pain associated with TMD.

Motorcycle Rider Training for the Prevention of Road Traffic Crashes

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Objectives

To quantify the effectiveness of pre- and post-license motorcycle rider training on the reduction of traffic offences, traffic crash involvement, injuries and deaths of motorcycle riders.

Search Strategy

We searched the Cochrane Injuries Group Specialized Register, CENTRAL (The Cochrane Library 2008, Issue 3), TRANSPORT, MEDLINE, EMBASE, CINAHL, WHOLIS (World Health Organization Library Information System), PsycInfo, LILACS (Latin American and Caribbean Health Sciences), ISI Web of Science: Social Sciences Citation Index (SSCI), ERIC, ZETOC and SIGLE. Database searches covered all available dates up to October 2008. We also checked reference lists of relevant papers and contacted study authors in an effort to identify published, unpublished and ongoing trials related to motorcycle rider training .

Selection Criteria

We included all relevant intervention studies such as randomised and non-randomised controlled trials, interrupted time-series and observational studies such as cohort and case-control studies.

Main Results

We reviewed 23 studies: three randomised trials, two non-randomised trials, 14 cohort studies and four case-control studies. Five examined mandatory pre-license training, 14 assessed non-mandatory training, three of the case-control studies assessed 'any' type of rider training, and one case-control study assessed mandatory pre-license training and non-mandatory training. The types of assessed rider training varied in duration and content.

Most studies suffered from serious methodological weaknesses. Most studies were non-randomised and controlled poorly for confounders. Most studies also suffered from detection bias due to the poor use of outcome measurement tools such as the sole reliance upon police records or self-reported data. Small sample sizes and short follow-up time after training were also common.

Conclusions

Due to the poor quality of studies identified, we were unable to draw any conclusion about the effectiveness of rider training on crash, injury, or offence rates. The findings suggest that mandatory pre-license training may be an impediment to completing a motorcycle licensing process, possibly indirectly reducing crashes through a reduction

in exposure. It is not clear if training (or what type) reduces the risk of crashes, injuries or offences in motorcyclists, and a best rider training practice can therefore not be recommended. As some type of rider training is likely to be necessary to teach motorcyclists to ride a motorcycle safely, rigorous research is needed.