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Cochrane Column: Best Evidence from the Cochrane Library
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Paracetamol Is a Safe, and Effective Drug for Treatment of Pain after Surgical Removal of Lower Wisdom Teeth

The surgical removal of wisdom teeth (third molars) is the most commonly performed surgical procedure in oral surgery practice. Postoperative complications may include swelling, bruising, and limited mouth opening. But patients are most often concerned about postoperative pain, which may be severe.

Paracetamol is effective in relieving pain with a low incidence of adverse effects. It is one of the most commonly used analgesics and is widely available without prescription around the world. In this review, authors investigated the optimal dose and interval for drug administration to provide pain relief after the surgical removal of wisdom teeth. The side effects of different doses of the drug were also explored.

Twenty-one trials with a total of 2048 patients were initially enrolled (1148 patients received paracetamol, and 892 patients received placebo). Of them 1968 (96%) patients were included in the meta-analysis (1133 patients received paracetamol, and 835 patients received placebo). Paracetamol provided a statistically significant benefit when compared with placebo for pain relief at both 4 and 6 hours after taking the drug. Risk ratio values for pain relief at 4 and 6 hours were 2.85 (95% confidence interval (CI) 1.89 to 4.29) and 3.32 (95% CI 1.88 to 5.87), respectively. The drug is most effective at 1000 mg dose, and can be taken at six hourly intervals without compromising safety. There was no statistically significant difference between the number of patients who reported adverse events (paracetamol group: 19% vs placebo group: 16%).

It should be noted that most of the studies had some limitations mainly due to poor reporting of information. However the review concludes that paracetamol is a safe and effective drug for treatment of postoperative pain after surgical removal of lower wisdom teeth.


Levothyroxine Replacement Therapy for Subclinical Hypothyroidism Does not Result in Improved Survival or Decreased Cardiovascular Morbidity

Subclinical hypothyroidism is defined as elevated serum thyroid-stimulating hormone (TSH) level with normal free thyroid hormones values. Patients with subclinical hypothyroidism may have vague, nonspecific symptoms of actual hypothyroidism but these thyroid-related symptoms are not specific. That is why the diagnosis is based on test results. The prevalence of subclinical hypothyroidism is 4% to 8% in general population, and up to 15% to 18% in women who are over 60 years old. There is considerable controversy regarding the morbidity, the clinical significance of subclinical hypothyroidism, and if these patients should be treated. Authors wanted to assess the effects of thyroid hormone replacement for subclinical hypothyroidism.

Twelve randomized clinical trials of 6 to 14 months duration involving 350 people were included. Eleven trials investigated levothyroxine replacement with placebo, one study compared levothyroxine replacement with no treatment. No trial assessed cardiovascular mortality or morbidity. Seven studies evaluated symptoms,
mood, and quality of life with no statistically significant improvement. One study showed a statistically significant improvement in cognitive function. Six studies assessed serum lipids. They showed a trend for reduction in some parameters after levothyroxine replacement.

Some echocardiographic parameters such as myocardial relaxation (as indicated by a significant prolongation of the isovolumic relaxation time) and diastolic dysfunction were improved after levothyroxine replacement therapy. Only four studies reported adverse events with no statistically significant differences between groups.

In current randomized controlled trials (RCTs), levothyroxine replacement therapy for subclinical hypothyroidism did not result in improved survival or decreased cardiovascular morbidity. Data on health-related quality of life and symptoms did not demonstrate significant differences between intervention groups. Some evidence indicates that levothyroxine replacement improves some parameters of lipid profiles and left ventricular function.


Cyclosporine A for Primary Biliary Cirrhosis

Primary biliary cirrhosis (PBC) is a chronic disease of the liver. Its annual incidence ranges from 2 to 24 people per million population. Its prevalence ranges from 19 to 240 people per million population. PBC primarily affects middle-aged women. The cause of PBC is unknown, but the dynamics of the disease resemble the “autoimmune disease” group. Therefore, one might expect a noticeable effect from administering an immune repressing drug (immunosuppressant). This review evaluates all clinical data on the immunosuppressant cyclosporine A for PBC.

Authors identified three trials with 390 patients that compared cyclosporine A with placebo. Two of them were assessed methodologically, which showed adequate quality with low-bias risk. Cyclosporine A did not significantly reduce mortality risk (RR 0.92, 95% CI 0.59 to 1.45), and mortality or liver transplantation (RR 0.85, 95% CI 0.60 to 1.20). Cyclosporine A significantly improved pruritus, but not fatigue. It significantly reduced alanine aminotransferase and increased serum albumin level. Patients in cyclosporine A group experienced adverse events such as renal dysfunction and hypertension more than the patients in the placebo group.

Despite improvements in pruritus and liver biochemical variables, cyclosporine A did not delay the progression to death or liver transplantation, or to an advanced histological stage. The authors do not recommend the use of cyclosporine A outside randomized clinical trials.


Incentive Spirometry for Preventing Pulmonary Complications after Coronary Artery Bypass Graft

Breathing complications after coronary artery bypass graft (CABG) surgery increase hospital stay and associated healthcare costs. They are among the main causes of postoperative morbidity and mortality. CABG interferes with the lungs function, causing collapse in some sections, which may lead to pneumonia. Re-inflation of collapsed lung may be done by a device called incentive spirometer, which reinforces a pattern of breathing in order to prevent and reverse the process. This device is used alone or in combination with other physiotherapy techniques. The reviewers aimed to assess the effects of incentive spirometry for preventing postoperative pulmonary complications in adults undergoing CABG.

Four RCTs with 443 participants were included in this review. There was no significant difference in pulmonary complications (atelectasis and pneumonia) between treatment with incentive spirometry and treatment with positive pressure breathing techniques (continuous positive airway pressure (CPAP), bilevel positive airway pressure (BiPAP), intermittent positive pressure breathing (IPPB), or preoperative patient education. Patients treated with incentive spirometry had worse pulmonary function and arterial oxygenation compared with patients treated with positive pressure breathing (CPAP, BiPAP, IPPB).

Individual small trials suggest that there is no evidence of benefit from incentive spirometry in reducing pulmonary complications and in decreasing the negative effects on pulmonary function in patients undergoing CABG. In view of the modest number of patients studied, methodological shortcomings, and poor reporting of the included trials, these results should be
interpreted cautiously. The authors recommended conducting an appropriately powered trial of high methodological rigor to determine those patients who may derive benefit from incentive spirometry after CABG.