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Ann Robinson's research reviews—10 December 2021

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Parathyroidectomy: underrated and underused?

Primary hyperparathyroidism—diagnosed on the basis of high blood calcium and parathyroid hormone levels—is a cause of osteoporosis, but whether parathyroidectomy reduces fracture risk is unclear. This US population based, longitudinal cohort study of 210 206 people over 65 years old found that parathyroidectomy within a year of diagnosis was associated with a lower adjusted risk of hip fracture and any fracture compared with no surgery. Of those who had a parathyroidectomy, 10.2% developed any fracture and 2.9% had a hip fracture, compared with 13.7% and 4.2% respectively of those treated non-operatively over a mean follow up of nearly three years.[1] Benefit in terms of reduced fracture risk was statistically significant within a year of the operation across all ages, levels of frailty, and degrees of osteoporosis, and the overall complication rate of surgery was 1.1%. There were limited clinical data, and the observational nature of the study means there may have been residual confounding. But it seems that parathyroidectomy is a safe and effective way to reduce the risk of fractures associated with primary hyperparathyroidism in anyone likely to live longer than a year.

Covid-19 booster jabs: take what you're given

My friends working in vaccination centres report that some people are refusing the Moderna booster and demanding the Pfizer booster on the grounds that it's better, despite the lack of any evidence to support their claims and the fact that they're both mRNA vaccines. This randomised trial into the reactogenicity and immunogenicity of seven different covid-19 vaccines, given as a third (booster) dose 10-12 weeks after second doses of Oxford/AstraZeneca or Pfizer vaccines, found that all seven vaccines (including Moderna and Pfizer) boosted immunity effectively after an initial course of the Oxford/AstraZeneca vaccine, and all except for Valneva boosted immunity after an initial course of the Pfizer vaccine.[2] All the vaccines had good side effect profiles, but some schedules were associated with greater reactogenicity. The data suggest that current doses of mRNA vaccines may be higher than needed as a booster and that focusing on IgG antibody levels is unwise because the correlation between antibody levels at day 28 and long term protection and immunological memory remain unknown. Individual countries will have to make their own call about the level of population-wide protection that they want, taking into account vaccine availability and a cost benefit analysis of the booster programme. It's complicated, but there seems to be no justification for insisting on one vaccine over another.

Calcium in cardiac arrest: time for a rethink?

Does calcium improve the chance of surviving a cardiac arrest? In this Danish randomised trial of 391 people not admitted to hospital but who were treated for a cardiac arrest, 19% of those who were given intravenous or intraosseous calcium after the first shot of adrenaline had a sustained return of spontaneous circulation, compared with 27% of those who were given saline.[3] However, the difference wasn't statistically significant, and the trial was terminated early after interim analysis because of concerns about harm in the calcium group. At 30 days, only 10 patients (5.2%) in the calcium group and 18 patients (9.1%) in the saline group were still alive. Theoretically, calcium may improve vascular tone and heart muscle contractility, but could also trigger harmful cardiac hypercontraction, so called stone heart. In practice, calcium is recommended for in-hospital arrests in certain situations such as hyperkalaemia, but it is often given even when there's no specific indication. This study suggests that a rethink about using calcium in unselected patients is needed.

Telemedicine for osteoarthritis of the knee

Osteoarthritis of the knee is a common problem with few effective solutions. Education, exercise programmes, and weight reduction advice are usually recommended, but during the pandemic, opportunities for face-to-face and hands-on interventions have been greatly limited. This Australian study randomised 415 people aged 45-80 years and with a body mass index of 28-40 into three groups.[4] All received online information; an exercise group had six video conference sessions with a physiotherapist who provided exercises, counselling, and advice about equipment and resources; and a diet group had six consultations with a dietician who encouraged a ketogenic, very low calorie diet followed by a gradual return to healthy eating. At six months, both the exercise and dietary programmes were associated with better (self rated) pain control and function than online advice alone, and the dietary programme was slightly more effective than the exercise group. Neither participants nor clinicians were blinded, which is a serious limitation, and not all patients can access the internet or follow online advice. On the other hand, it saves having to traipse up to a clinic, and these interventions can be scaled up to reach a greater number of people.

Complete resection is key for recurrent ovarian cancer

In this trial, 407 women with recurrent ovarian cancer were randomised to cytoreductive surgery to reduce the cancer cells in the abdominal cavity followed by platinum based chemotherapy or to chemotherapy alone.[5] The median overall survival was 53.7 months

in the surgery group and 46.0 months in the non-surgery group. Women who had a complete resection (75% of those who underwent surgery) had the most favourable outcome, with a median overall survival of 61.9 months. Quality-of-life measures were similar in both groups over a one year period, and there was no increase in deaths associated with surgery. The women all had recurrent disease and had already been through a lot of difficult treatment. This study suggests cytoreductive surgery should be advised only if complete resection can be achieved, which depends on the nature of the tumour and expertise of the surgical team.

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