Cardiovascular disease

Continuous ECG vs loop recording for AF detection post stroke

Automatic external loop recording (ELR) is not suitable as a single monitoring device for AF screening following stroke, a prospective cohort study from Denmark has concluded.

Consecutive patients aged 60 years and over who had had an acute ischaemic stroke or transient ischaemic attack (TIA) with no prior AF were recruited to the study between June 2013 and December 2017. A total of 1,412 patients, mean age 72.8 years, were monitored for 48 hours by simultaneous continuous ECG recording and ELR.

The primary outcome was the detection of AF lasting longer than 30 seconds. The gold standard was taken as cardiologist verified AF in continuous ECG monitoring. The authors also hypothesised ELR to detect 15% fewer patients with AF than continuous ECG recording.

In continuous ECG monitoring 38 (2.7%) patients had AF. ELR automatically categorised 219/1,412 patients (15.5%) with AF, including 32/38 (85%) patients with AF on continuous ECG monitoring. After cardiologist review of ELR recordings, AF was diagnosed in 57/219 patients, of which 32 (56%) had AF on continuous ECG monitoring.

For cardiologist adjudicated AF detection by ELR, sensitivity was 84% (95% CI: 69-94%), specificity was 98% (95% CI: 97-99%) and positive predictive value was 56% (95% CI: 42-69%).

Screening for AF in patients who have had an ischaemic stroke or TIA is important to ensure the timely initiation of oral anticoagulation as prophylaxis against recurrent stroke. A 12-lead ECG has some use in this situation but if this shows sinus rhythm then more prolonged ECG recording will be required. The optimal method of ECG monitoring is often disputed.

The authors conclude that automatic AF detection with ELR results in an AF diagnosis in more than five patients without AF for each patient with AF as verified on continuous ECG monitoring. However, with cardiologist verification of AF detection by ELR, sensitivity improved to 84% and specificity 98%.

'Automatic ELR as investigated in this study may be considered to rule out AF but is not suitable as a single monitoring device for AF screening in patients early after stroke,' they state.

However, ELR is probably of more use in monitoring over more extended periods of time such as seven days or more to increase the yield of AF detection but this was not the intention of this trial.

DR PETER SAVILL

Sejr MH, May O, Damgaard D et al. External continuous ECG versus loop recording for atrial fibrillation detection in patients who had a stroke. *Heart* Published Online First: 21 March 2019. doi: 10.1136/heartjnl-2018-314186

Diabetes

SGLT2 inhibitor produces good glycaemic control in everyday practice

An observational study from Scotland has shown that dapagliflozin produced equivalent improvements in glycaemic control in patients with type 2 diabetes in general practice to those reported in clinical trials.

The Scottish Diabetes Research Network Epidemiology Group used data from the Scottish Care Information-Diabetes collaboration database, which links with mortality data from the General Registrar. Participants in the study were aged 18-80 years at entry with a diagnosis of type 2 diabetes. Dapagliflozin ever users were defined as patients with any initiation of dapagliflozin between November 2012, when the drug was introduced, and the end of the study.

In total, 8,566 dapagliflozin users, of whom 7,231 were considered 'on licence', and 230,310 never users met the inclusion criteria. Altogether there were 6,674 person-years of follow-up post initiation and median follow-up was 210 days. Dapagliflozin was most commonly used as a third-line add-on therapy.

Crude changes in the treatment group were adjusted because of the known tendency of HbA_{1c} to increase over time.

- The crude within-person change in HbA_{1c} was–10.41 mmol/mol (–0.95%) after 3 months' exposure.
- The crude change after 12 months was –12.99 mmol/mol (–1.19%)
- However, when adjustment for the expected rise over time in HbA_{1c} was taken into consideration the dapagliflozin exposure effect estimate was –15.14 mmol/mol (95% CI:–15.87 to –14.41) i.e.–1.39% (95% CI: –1.45 to –1.32) at 12 months and this was maintained thereafter.

A drop in systolic blood pressure of –4.32 mmHg (95% CI: –4.84 to –3.79) on exposure within the first 3 months was also maintained.

Reductions in BMI and body weight stabilised by 6 months at –0.82 kg/m^2 (95% CI: –0.87 to –0.77) and –2.20 kg (95% CI: –2.34 to –2.06) and were maintained. eGFR declined initially by –1.81 ml/min/1.73 m^2 (95% CI: –2.10 to –1.52) at 3 months but varied thereafter.

There were no significant effects of cumulative drug exposure on safety outcomes, although the authors acknowledge the dataset was underpowered to detect these with confidence.

The investigators conclude: 'The effectiveness of dapagliflozin on HbA_{1c} and other clinical outcomes observed in clinical trials was apparent in this real-world effectiveness study; treatment effect estimates were at least as large as in clinical trials even when likely observational analysis biases are considered. Dapagliflozin lowers HbA_{1c} and SBP shortly after

treatment initiation but also appears to prevent worsening of these outcomes over the ensuing 2 years. Dapagliflozin also lowered BMI and body weight.'

This study is interesting because it shows where most GPs currently place SGLT2 inhibitors as add-on therapy in type 2 diabetes. The data from real-world use mirror the data from clinical trials and seem to show safe reduction in HbA_{1c} and other cardiovascular risk factors. Most clinicians are encouraged that weight loss with an SGLT2 inhibitor can help to bolster lifestyle changes.

DR MATTHEW LOCKYER

McGurnaghan SJ, Brierley L, Caparrotta TM et al on behalf of the Scottish Diabetes Research Network Epidemiology Group. The effect of dapagliflozin on glycaemic control and other cardiovascular disease risk factors in type 2 diabetes mellitus: a real-world observational study. *Diabetologia* 2019;623:621-32

Respiratory medicine

Educational intervention encourages smokers to consult with respiratory symptoms

Although an educational intervention increased respiratory consultations in smokers it did not improve detection of lung cancer, in a randomised controlled trial from Australia.

The CHEST Australia Trial recruited long-term smokers (≥ 20 pack-years), aged 55 years and over, and former smokers who had quit in the past 15 years, from 17 practices. Participants were randomised to either the intervention or control group.

In the intervention group, a trained researcher performed spirometry and then guided the participant through a self-help manual, entitled *Chest Symptoms that Call for Action*.[1] The key objectives of the manual were to: increase the salience and personal relevance of symptoms, improve knowledge of symptoms by introducing chest disease prototypes, reinforce the benefits of early intervention in lung cancer and other chest disease, and sanction early consultation. Patients were given guidance about when consultation would be appropriate.

The control group also underwent spirometry followed by a general discussion about lung health.

The primary outcome was consultation rates for respiratory symptoms. Data on consultations in the year before the trial and for 12 months after the consultation were collected through audit of GP records.

The primary outcome was determined for 542 participants. The 12-month questionnaire data were available for 416 participants (212 in the intervention group and 204 controls). SYMPTOM questionnaires were completed by participants for 88% of intervention and 66% of control consultations. On average, the overall cohort consulted their GP nine times over the 12-month follow-up.

There was a 40% relative increase in respiratory consultations in the intervention group: relative rate (RR) 1.40 (95% CI: 1.08 to 1.82; P = 0.0123).

There were no significant differences in time to first respiratory consultation or total consultation rates. However, there was a non-significant mean reduction of 14 days in time to first presentation with respiratory symptoms.

Patients' perceived risk, self-efficacy to consult or knowledge of symptoms of lung disease did not differ between the groups.

Three patients were diagnosed with lung cancer during the 12-month follow-up, two in the intervention group and one in the control group. The authors comment that: 'It would require a substantially larger trial to be powered even to detect differences in time to diagnosis of lung cancer, let alone in clinical outcomes such as lung cancer stage or mortality.'

They conclude that this intervention could have an important role in primary care as part of a broader approach to improve the management of respiratory symptoms and serious lung disease.

There is growing evidence that time to diagnosis in symptomatic patients is associated with clinical outcomes for lung cancer. This trial seems another step pointing to the benefits of promoting health awareness with respect to lung cancer in at-risk populations. However, more work is required until we can be sure of concrete benefits.

DR PETER SAUL

Emery JD, Murray SR, Walter FM. The Chest Australia Trial: a randomised controlled trial of an intervention to increase consultation rates in smokers at risk of lung cancer. *Thorax* 2019;74:362-70

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