Cardiovascular disease

Digoxin therapy associated with increased mortality in atrial fibrillation

The use of digoxin is independently associated with a raised risk of hospitalisation and death in adults with incident atrial fibrillation and no heart failure, a retrospective cohort study from the USA has found.

A total of 14,787 age, sex and high-dimensional propensity score-matched patients with incident atrial fibrillation and no previous heart failure or digoxin use were studied in the ATRIA-CVRN study.

The investigators looked at the association between newly initiated digoxin therapy and the risk of death and hospitalisation. The median follow-up was 1.17 years.

Digoxin use was associated with higher rates of death (8.3 vs 4.9 per 100 person-years; P < 0.001) and hospitalisation (60.1 vs 37.2 per 100 person-years; P < 0.001).

After adjustment for other factors the use of digoxin was associated with a 71% higher risk of death, hazard ratio (HR) 1.71 (95% CI: 1.52-1.93) and a 63% higher risk of hospitalisation, HR 1.63 (95% CI: 1.56-1.71).

No differences were found when the results were analysed by age or sex or using intention-to treat or on-treatment approaches.

Digoxin is still commonly used for rate control in atrial fibrillation and is particularly favoured in less active elderly patients where its relative inferiority in rate control relative to beta blockers and rate-limiting calcium antagonists is less noticeable. However, there is limited evidence supporting its use and previous studies have shown adverse outcomes.

The authors of this study conclude that in adults with atrial fibrillation, digoxin use was independently associated with higher risk of death and hospitalisation.

They recommend that other rate control options should be tried before resorting to digoxin and that this should generally be used with caution in the management of atrial fibrillation.

It is important to note that this trial did not include patients with atrial fibrillation and heart failure where there may still be a role for digoxin given its weakly positive inotropic action coupled with a beneficial effect on heart rate.

However, a recent systematic review and meta-analysis has also called this into question and it may be that the writing is on the wall for digoxin use after many years of relative security in guidelines and expert consensus.

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● **Freeman JV, Reynolds K, Fang M et al. Digoxin and risk of death in adults with atrial fibrillation: the ATRIA-CVRN study. *Circ Arrhythm Electrophysiol* 2015;8(1):49-58**

Addiction

Benzodiazepine use raises risk of fatal overdose in patients treated with opioid analgesics

The use of benzodiazepines is strongly associated with death from drug overdose in veterans receiving opioid analgesics, a study from the USA has found.

The authors compared historical data from 2,400 US veterans who had died from a drug overdose while receiving opioid analgesics with that of a random sample of nearly half a million (420,386) veterans who were known to have received opioid analgesia over a six-year period.

Patients prescribed methadone maintenance or those receiving palliative care were excluded.

Benzodiazepine prescribing history, dose, type and schedule were identified from the Veterans Health Administration database.

These data were linked to 'death from poisoning by any drug' from information contained in the National Death Index.

Of the 422,786 veterans who had received prescriptions for opioid analgesics, 112,069 (27%) had also received prescribed benzodiazepines during the study period.

Almost half (49%) of the deaths from drug overdose, 1,185, occurred when veterans had been prescribed opioids together with benzodiazepines. The adjusted hazard ratio (HR) was 2.33 (95% CI: 2.05-2.64) for former benzodiazepine prescription compared with no prescription and HR 3.86 (95% CI: 3.49-4.26) for »