GLOSSARY

DIG
Digitalis Investigation Group

KAPLAN–MEIER ANALYSIS
A conditional probability strategy used for estimation of survival in clinical trials with censored observations

Use of transesophageal echocardiography to select patients for cardioversion

Cardioversion can improve heart function, reduce the risk of embolism and relieve symptoms in patients with atrial fibrillation. Despite anticoagulation therapy, thromboembolic complications can still occur if thrombi form and migrate either at the start of cardioversion or after cardioversion.

Transesophageal echocardiography (TEE) is emerging as an accurate method for detecting atrial thrombi and identifying patients who might benefit from early cardioversion. Few data exist, however, regarding the prevalence of atrial thrombi before cardioversion, or the effects of anticoagulation therapy.

Maltagliati *et al.* have used TEE to evaluate the prevalence of thrombi in 759 consecutive patients with atrial fibrillation. They detected left atrial thrombi in about 7% of cases, irrespective of patients' anticoagulation regimen. Cardioversion was successful in almost 90% of cases, and no major thromboembolic events occurred. In cases in which a high rate of left atrial thrombi was recorded, cardioversion treatment was postponed.

According to the researchers, TEE could detect atrial thrombi more accurately than transthoracic echocardiography. Their findings support the use of this technique for guiding the selection of patients to undergo early cardioversion, and point to an associated reduction in the risk of embolic events.

Claire Braybrook

Original article Maltagliati A *et al.* (2005) Usefulness of transoesophageal echocardiography prior to cardioversion in patients with atrial fibrillation and different anticoagulant therapies. *Heart* [doi: 10.1136/hrt.2005.071860]

Relationship between serum digoxin concentration and outcome in chronic heart failure

The DIG trial showed that digoxin reduced heart-failure (HF)-related hospitalizations, but not overall mortality, in HF patients with ejection fraction (EF) ≤45%. Low serum digoxin concentrations (SDCs) are associated with reduced mortality, but this correlation has not been demonstrated in patients with EFs >45%. Ahmed *et al.* investigated the effects of digoxin on all-cause mortality and HF-related hospitalization in HF patients with a range of EFs and SDCs.

This comprehensive post hoc analysis focused on 5,548 DIG trial patients receiving either placebo ($n = 3,861$) or digoxin at ≤0.125 mg/day, 0.25 mg/day or >0.25 mg/day. Of the 1,687 digoxin-treated patients for whom data were available, 982 were classified by the authors as having low SDC (0.6–1.2 nM [0.5–0.9 ng/ml]) and 705 were classified as having high SDC (≥1.3 nM [1.0 ng/ml]).

KAPLAN–MEIER ANALYSIS and multivariate analysis showed that, compared with placebo, low SDC was associated with a significantly reduced risk of death ($P < 0.0001$). HF-related hospitalization was significantly less likely in both low and high SDC patients than in placebo patients ($P < 0.0001$ and $P = 0.006$, respectively); low SDC also reduced risk of all-cause hospitalization ($P < 0.0001$). Factors predicting high SDC included increased age, female sex, diuretic use and digoxin dose ≥0.25 mg/day.

The authors conclude that digoxin, in addition to reducing HF-related hospitalization in chronic HF patients, also reduces all-cause mortality and all-cause hospitalization if given at doses that achieve an SDC of 0.6–1.2 nM. They recommend that digoxin should be used more widely at such doses in HF patients.

Rebecca Ireland

Original article Ahmed A *et al.* (2006) Digoxin and reduction in mortality and hospitalization in heart failure: a comprehensive *post hoc* analysis of the DIG trial. *Eur Heart J* **27:** 178–186

A comparison of low-molecular-weight and unfractionated heparin

Unfractionated heparin (UFH) has been successfully used as an antithrombin therapy for patients with ST-segment elevation myocardial infarction (STEMI); however, low-molecular-weight heparin (LMWH) has various pharmacologic and practical advantages. Sabatine and co-workers investigated whether treatment with LMWH for 48 h improved the rate of infarct-related artery patency and reduced the incidence of adverse cardiovascular events compared with UFH, and whether LMWH was