factors VIII (**not** V), IX,X, XI and XII that may explain an isolated prolonged APTT, as well as severe von Willebrandt's disease, lupus anticoagulant and unfractionated heparin usage.

Cardiology day case unit: the way to manage chronic cardiovascular conditions cost-effectively in future

Editor – We read with great interest Banerjee *et al*'s clinical practice paper (*Clin Med* April 2012 pp 133–6) on intravenous diuretic day-case treatment (DCIDT) for heart failure patients. DCIDT appears to be a very simple, innovative way to reduce the burden of hospital admissions in heart failure patients.

It is clear that heart failure is a common condition and affects between 1 and 20 per 1,000 of the general population.[1] The prevalence of heart failure is likely to increase in parallel with life expectancy due to the success of medical therapy for conditions such as myocardial infarction and hypertension. This trend is seen across the industrialised world.[2] In this country, heart failure accounts for a total of 1 million inpatient bed-days (2% of all NHS inpatient bed-days) and 5% of all emergency medical admissions to hospital.[3] Hospital admissions because of heart failure are projected to rise by 50% over the next 25 years – largely as a result of the ageing population.[4,5] It is estimated that the total annual cost of heart failure to the NHS is around 2% of the total NHS budget; approximately 70% of this total is due to the costs of hospitalisation.[6,7] Readmissions are common: about one in four patients are readmitted within three months of discharge.[8]

Given these figures, there is an obvious need to develop new management strategies to provide treatment to patients without requiring hospital admission. We believe that several recent developments in the management of chronic cardiovascular conditions could form the foundation of a well-run cardiology day case unit in the future. Such units could dramatically reduce the overall cost of congestive heart failure (CHF) to the NHS. A multidisciplinary approach with heart failure specialists nurses, clinicians and allied health professionals might provide some of the following services.

- *Recognition and monitoring:* A recent systematic review and meta-analysis showed that telemonitoring and structured telephone support appear to be effective interventions to improve outcomes in patients with CHF.[9] However, the recent trials (TIM-HF, Tele-HF) did not show much overall benefit from them. The reason behind this was the flaw in the study design (both control groups were just too well treated to show much between-group difference). Telemedicine may help to recognise patients needing interventions in a day case cardiology unit.
- *Heart failure bio-marker monitoring:* The aim of the PROTECT study was to determine whether treatment aimed at achieving and maintaining amino-terminal B-type natriuretic peptide (NT-proBNP) levels at or below 1,000 pg/ml could improve outcomes in patients with chronic LVSD.[10] An improvement in quality of life and a reduction in the number of cardiovascular events was reported in the NT-proBNP group compared with the standard therapy group. The evidence of this study could be applied in cardiology day case units to monitor heart failure patients.
- *Other interventions:* Enhanced external counter pulsation (EECP) is a valuable outpatient procedure providing acute and long-term relief of anginal symptoms and improved quality of life among a group of patients with symptomatic ischemic heart disease with or without CHF.[11] However, further research is needed in terms of cost-effectiveness of this intervention in CHF patients.
- *Optimisation of cardiac resynchronisation therapy:* Cardiac resynchronisation therapy (CRT) is an established treatment of patients with symptomatic advanced heart failure. 25% of patients with CRT are non-responders. Given the cost related to the device implant and follow-up, the role of the day case unit is to integrate the follow-up of this group with optimisation using echocardiography and device programming, especially in the non-responders.
- *Counselling:* Depression leads to poorer outcomes in patients with heart failure, including increased risk of poor functional status, hospital readmission, and death.[12] Hence, depression screening in cardiology day case units could be a way forward to improve QOL in those suffering from CHF.

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References

1 Sharpe N, Doughty R. Epidemiology of heart failure and ventricular dysfunction. *Lancet* 1998;353:(Suppl. 1):37.
2 Senni M, Tribouilloy CM, Rodeheffer R *et al.* Congestive heart failure in the community – Trends in incidence and survival in a 10-year period. *Arch Intern Med* 1999;159:29–34.
3 National Institute for Health and Clinical Excellence. *CG108 Chronic heart failure: costing report.* London: NICE, 2010.
4 Cowie MR, Wood DA, Coats AJ *et al.* Incidence and aetiology of heart failure; a population-based study. *Eur Heart J* 1999;20:421–8.
5 Davies M, Hobbs F, Davis R *et al.* Prevalence of left-ventricular systolic dysfunction and heart failure in the Echocardiographic Heart of England Screening study: a population based study. *Lancet* 2001;358:439–444.
6 Petersen S, Rayner M, Wolstenholme J. *Coronary heart disease statistics: heart failure supplement.* London: British Heart Foundation, 2002.
7 Stewart S, Horowitz JD. Home-based intervention in congestive heart failure: long-term implications on readmission and survival. *Circulation* 2002;105:2861–6.
8 Cleland JG, Swedberg K, Follath F *et al.* The EuroHeart Failure survey programme – a survey on the quality of care among patients with heart failure in Europe. Part 1: patient characteristics and diagnosis. *Eur Heart J* 2003;24:442–63.

9 Inglis SC, Clark RA, McAlister FA *et al.* Which components of heart failure programmes are effective? A systematic review and meta-analysis of the outcomes of structured telephone support or telemonitoring as the primary component of chronic heart failure management in 8323 patients: Abridged Cochrane Review. *Eur J Heart Fail* 2011;13:1028–40. Epub 6 July 2011.
10 Bhardwaj A, Rehman SU, Mohammed A *et al.* Design and methods of the Pro-B Type Natriuretic Peptide Outpatient Tailored Chronic Heart Failure Therapy (PROTECT) Study. *Am Heart J* 2010;159:532–8.
11 Manchanda A, Soran O. Enhanced external counterpulsation and future directions: step beyond medical management for patients with angina and heart failure. *J Am Coll Cardiol* 2007;50:1523–31.
12 Silver MA. Depression and heart failure: an overview of what we know and don't know. *Cleve Clin J Med* 2010;77:S7–S11.