J R Coll Physicians Edinb 2010; 40:189–90
doi:10.4997/JRCPE.2010.221

RECENT DEVELOPMENTS IN THE MANAGEMENT OF CORONARY HEART DISEASE

Although it is true that 'the acceptable limit for percutaneous coronary intervention (PCI) related delay, beyond which outcomes may be less favourable than with immediate fibrinolytic therapy, is typically around 110–120 minutes' (Menown IBA. Contemporary management of coronary heart disease. *J R Coll Physicians Edinb* 2010; 40:44–8), a 'hybrid' strategy has emerged, whereby patients with ST segment elevation myocardial infarction (STEMI) receive immediate fibrinolysis, followed, within six hours, by routine early angioplasty (median interval 2.8 hours).[1] In that trial by Cantor et al. the composite endpoint, within 30 days, of death, reinfarction, recurrent ischaemia, new or worsening congestive heart failure or cardiogenic shock, occurred less commonly (p=0.004) in patients randomised to the strategy of immediate fibrinolysis followed by PCI than in patients randomised to fibrinolysis without subsequent PCI.[1] There was no significant difference in major bleeding between the two groups.

Another major development has been in the PCI management of STEMI patients where the infarct-related artery (IRA) coexists with multivessel coronary artery disease. In a recent trial, patients meeting this description were randomised to PCI of the IRA only versus PCI of the IRA in association with PCI of coronary vessels characterised by >70% diameter stenosis (the latter either performed simultaneously or staged within an average of 56.8 days after PCI). On mean follow-up of 2.5 years, major cardiac events (defined as cardiac or non-cardiac deaths, reinfarction, rehospitalisation for acute coronary syndrome and repeat coronary revascularisation) occurred less frequently (p <0.001) in patients randomised to the combined procedure than in patients randomised to PCI of the IRA only. Patients scheduled for complete simultaneous treatment of non-IRA experienced a similar rate of major cardiac events as those randomised to the staged procedure.[2]

Probably as a result of the fact that left ventricular diastolic dysfunction is more difficult to evaluate than left ventricular systolic dysfunction, treatment modalities for mitigating the adverse natural history of diastolic dysfunction have not been explored in the post-myocardial infarction (MI) context. Outstanding issues include the potential for hypertension-related myocardial fibrosis and diastolic dysfunction[3] to give rise to eventual congestive cardiac failure in their own right, or through the mediation of hypertension-related atrial fibrillation (AF).[4,5] This is also true of diabetes-related diastolic dysfunction, which can be a predictor of heart failure as well as AF.[6]

Hypertension and diabetes are each closely associated with MI,[7,8] and the 'diastolic' content of this association may need to be addressed through the use of anti-aldosterone drugs such as eplenerone, whose antifibrotic properties[9] have the potential to have a disease-modifying effect on the natural history of post-MI diastolic dysfunction.

Dr OMP Jolobe
Retired geriatrician, Manchester

References

1 Cantor WJ, Fitchett D, Borgundvaag B et al. Routine early angioplasty after fibrinolysis for acute myocardial infarction. *N Engl J Med* 2009; 360:2705–18. doi:10.1056/NEJMoa0808276
2 Politi L, Sgura F, Rossi R et al. Multivessel coronary disease in ST-elevation myocardial infarction: three different revascularisation strategies and long-term outcomes. *Heart* 2009 Sep 23 [Epub ahead of print]. doi:10.1136/hrt.2009.177162
3 Müller-Brunotte R, Kahan T, López B et al. Myocardial fibrosis and diastolic dysfunction in patients with hypertension: results from the Swedish Irbesartan Left Ventricular Hypertrophy Investigation versus Atenolol (SILVHIA). *J Hypertens* 2007; 25:1958–66. doi:10.1097/HJH.0b013e3282170ada
4 Go AS, Hylek EM, Phillips KA et al. Prevalence of diagnosed atrial fibrillation in adults. *JAMA* 2001; 285:2370. doi:10.1001/jama.285.18.2370
5 Stewart S, Hart CL, Hole DJ et al. A population-based study of the long-term risks associated with atrial fibrillation: 20-year follow-up of the Renfrew/Paisley Study. *Am J Med* 2002; 113:359–64. doi:10.1016/S0002-9343(02)01236-6
6 From AM, Scott CG, Chen HH. The development of heart failure in patients with diabetes mellitus and pre-clinical diastolic dysfunction: a population-based study. *J Am Coll Cardiol* 2010; 55:300–5. doi:10.1016/j.jacc.2009.12.003
7 Kannel WB, Dannenberg AL, Abbott RD. Unrecognised myocardial infarction and hypertension: the Framinhgam Study. *Am Heart J* 1985; 109(3 Pt 1):581–5. doi:10.1016/0002-8703(85)90566-6
8 Kannel WB, McGee DL. Diabetes and cardiovascular disease: the Framingham Study. *JAMA* 1979; 241:2035–8. doi:10.1001/jama.241.19.2035
9 Mak GJ, Ledwidge MT, Watson CJ et al. Natural history of markers of collagen turnover in patients with early diastolic dysfunction and impact of eplerenone. *J Am Coll Cardiol* 2009; 54:1674–82. doi:10.1016/j.jacc.2009.08.021

Author's reply:

Dr Jolobe's letter makes several keys points. The value of routine angiography +/– revascularisation following successful fibrinolytic therapy is well highlighted by the TRANSFER-AMI study,[1] and a notable update in the latest European ST elevation guidelines was the recommendation to undertake angiography +/– revascularisation 3–24 hours after successful fibrinolytic therapy (or earlier [rescue] for patients without early ≥50% ST resolution). Failure to achieve full revascularisation (either during cardiac surgery or percutaneous intervention) is associated with poorer long-term outcome. It remains a matter of debate whether non-culprit revascularisation should be staged or undertaken during primary PCI, with current European practice typically favouring staged non-culprit revascularisation. Although Politi's study[2] is underpowered to address this question, it does support the value of complete vs incomplete revascularisation. Finally, I agree it is likely that the potential of aldosterone blockade extends well beyond that demonstrated in the EPHESUS trial.[3]

Dr IBA Menown

References

1 Cantor WJ, Fitchett D, Borgundvaag B et al. Routine early angioplasty after fibrinolysis for acute myocardial infarction. *N Engl J Med* 2009; 360:2705–18. doi:10.1056/NEJMoa0808276

2 Politi L, Sgura F, Rossi R et al. Multivessel coronary disease in ST-elevation myocardial infarction: three different revascularisation strategies and long-term outcomes. *Heart* 2009 Sep 23 [Epub ahead of print]. doi:10.1136/hrt.2009.177162

3 Pitt B, Remme W, Zannad F et al. Eplerenone, a selective aldosterone blocker, in patients with left ventricular dysfunction after myocardial infarction. *N Engl J Med* 2003; 348:1309–21. doi:10.1056/NEJMoa030207

DISCIPLINE IN THE RESIDENCIES

Congratulations to Dr Burt (RAP Burt. The Residency Mess at the Royal Infirmary of Edinburgh: history and traditions. *J R Coll Physicians Edinb* 2009; 39:268–75), on evoking so many enjoyable memories of life at the Residency Mess, particularly with the photograph of Mr Morris, the indispensable and ever helpful Mess Butler with the unforgettable turn of phrase, climaxing for our group, I recall, at the formal Mess Dinner with such advice as: 'Drive sober and enjoy this hospitable capital. Drive drunk and enjoy this capital hospital.'

Looking for a clue to the mystery posed by Dr Burt of why the Medical Superintendent issued a typewritten document entitled 'Discipline in the Residencies'[1] in November 1957, when it is not clear to whom the document was sent or why, reminds me of certain events which occurred on 30 September 1957.

The members of the graduating class of 1956 who were to complete their pre-registration year in the Residency on September 30 decided to celebrate this occasion with a final party. Music and dancing proceeded apace. Several games of 'Hare and Hounds' were conducted with vigour along the underground corridors of the old Infirmary. Warnings about the loud noise were made, but produced no immediate response. Finally a breakfast was self-cooked in the kitchen and enjoyed on the large dining room table, where we had recently so laboriously carved and dated our signatures. One resident appeared on his bicycle and rode down the long three-panelled table. Shouts of 'Move the table!' arose and the cyclist soon fell, unharmed, onto the laps of his colleagues. Unfortunately, earlier claims[2] that no complaints were ever made over the noise created by the flow of beer and the loud music in the Mess were not to be fulfilled. Threats had been made earlier of calling the police, but it was the moment the cyclist traversed the table that the cry was heard, 'The police are here!' A glance outside revealed three police Jaguars arriving at the Residency. Suddenly the party was over: the residents were all in their beds – asleep!

Breakfast the following morning was interrupted by the news that all the residents who were on staff the previous day were to be suspended. This was of little more than academic interest to most of us as our duties were over. We planned to leave within the hour to await notice of our call-up into the Armed Forces for two years of National Service, perhaps anticipating adventures overseas in Hong Kong, Kenya, West Germany or possibly the Middle East, and not least Cyprus.

These events suggest that the reason for this typed document may have been an attempt by Dr Francis to have available for circulation an explanation of the background to the events that led to the arrival of the police at the Residency. Whether it was ever used and whether there were precedents, I am unsure. For the few residents who were to remain on staff, the punishments were, I believe, not severe.

Professor David Leak
Emeritus Professor of Medicine, Texas A&M University System, USA, and former Mess Poet

References

1 Medical Superintendent. Discipline in the Residencies. November 1957. EUL LHSA, LH Bx/114/2.

2 James A. The Edinburgh Royal Infirmary Old Residents' Club. *The Scottish Medical and Surgical Journal* 1898; III:136–43.

ERRATUM

We would like to correct an error in the abstract of Cuthbertson, Boroujerdi and Prescott's paper in our March issue (The use of combined physiological parameters in the early recognition of the deteriorating acute medical patient? *J R Coll Physicians Edin* 2010; 40:19–25). The first sentence of the results section of the abstract should read: Heart rate (HR) and respiratory rate (RR) were significantly higher – and oxygen saturation (SaO_2) significantly lower – in the medical-ICU group as compared with the medical non-ICU group, and in the respiratory-ICU group as compared with the respiratory-non ICU group.

Answers to the radiation oncology MCQs on pages 143–4:

1: **A**. 2: **D**. 3: **C**. 4: **A**. 5: **B**, **E**.