

Ischaemic Heart

by Albert Fenech

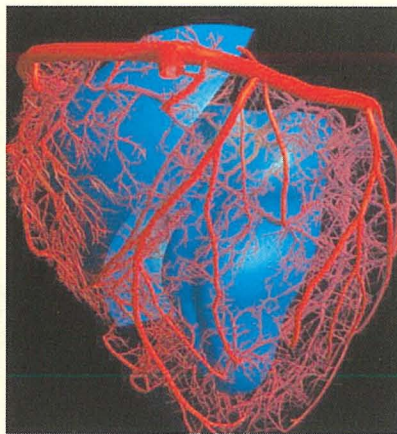
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It is said that in order to know where you are and where you are going necessitates the knowledge of where you have come from. I recently had one of those memorable 'once in a lifetime' experiences celebrating a 30 year graduation anniversary with cherished friends and colleagues, some of whom I had not seen for years.

It seemed a good starting point for this article to attempt and outline where Cardiology has arrived since I qualified and the exciting tomorrow that beckons. Space will limit the discussion to 2 major clinical problems that face us in our clinical practice, mainly Ischaemic Heart Disease (IHD) and Congestive Cardiac Failure (CCF). This article will mainly discuss issues relating to IHD leaving the topic of CCF for the next issue.

Thirty years ago our management of Acute Myocardial Infarction was limited to monitoring patients in the Coronary Care Unit (CCU) for a couple of days and keeping our fingers crossed for the patient's survival without too many limitations on his or her quality of life. Indeed we did manage to salvage some of those who had a life-threatening arrhythmia or heart failure with the use of a defibrillator, pacemaker and/or medication that was available at the time. The concept of myocardial salvage and patient rehabilitation was an interesting theoretical topic while that of myocardial regeneration was considered entirely to be in the realms of science fiction.

The pharmacological advances that have made a significant impact since those days have been many. ACE inhibitors (ACEi) appeared in the early 80's and were the first drug that actually improved mortality in CCF and now have a role to play in patients with IHD. Another group of drugs that were very helpful in the treatment of IHD were considered absolutely contraindicated in the presence of CCF yet have emerged to be precisely the opposite in the 90's - Beta Blockers. These two groups of drugs (together with Spironolactone) are the only ones that actually improve survival in patients with CCF. A group of drugs released in the past 10 years, Angiotensin-2 Receptor Blockers (ARBs), seem to have the same clinical benefits as their ACEi



cousins. Other drugs that have made a significant impact in the treatment of IHD are Statins and Clopidogrel which together with Aspirin, Calcium Channel Blockers, Nicorandil and Trimetazidine complete the array of medication available to us in the pharmacological management of IHD.

The development of Percutaneous Transluminal Coronary Angioplasty (PTCA) towards the end of the 70's has been without doubt the greatest leap forward in the management of IHD since the introduction of Coronary Artery Bypass Grafting (CABG) in the mid 60's. The end of the 80's saw the development of intracoronary stents which reduced the incidence of abrupt closure and restenosis of lesions and the innovation of drug eluting stents (DES) a few years ago has greatly reduced the Achilles' heel of coronary angioplasty namely that of restenosis. Because of the availability of other devices that can 'debulk' atheromatous plaque such as the Rotablator or Cutting tools, the procedure is now referred to as Percutaneous Coronary Intervention (PCI).

Atheromatous plaque that is likely to cause acute problems is referred to as 'Vulnerable Plaque' and a number of newer devices are available in order

to try and identify these areas that are likely to rupture or dissect and lead to an Acute Coronary Syndrome (ACS). These include intravascular ultrasound that may also be modified to identify lipid, calcium and necrotic areas inside the plaque. This 'Virtual Histology' can assist in delivering therapy to specific areas inside a diseased coronary artery considered to be dangerous.

The ever increasing role of PCI in the management of IHD has changed the balance of indications for patients such that over the past few years the number of patients undergoing this procedure has exceeded the number of patients referred for CABG. Other percutaneous procedures which are able to occlude Patent Foramen Ovale (PFO), Atrial Septal Defect (ASD) and Ventricular Septal Defect (VSD), dilate stenosed Mitral and Pulmonary valves, 'clip' mitral regurgitant leaflets, perform a mitral annuloplasty or implant an Aortic Valve over a diseased one, have reduced the number of patients referred for conventional surgery. The net effect of these developments has resulted in a further bonding of Cardiologists and Cardiac surgeons sharing the interventional care of patients in ways hitherto unimagined and there is no doubt that this 'team' approach will evolve even further in the future.

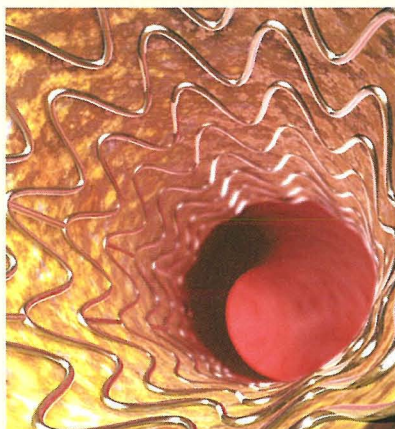
The management of Unstable Angina (UA) and Acute Myocardial Infarction (AMI) has changed radically over the past 20 years. Recognising that early intervention dramatically reduces both morbidity and mortality in these conditions has established roles for thrombolytic therapy and PCI particularly in the early hours after the onset of pain in AMI. The need for a 24 hour availability of an experienced PCI team is an essential part of any modern and effective health service though sadly many countries have still not implemented the necessary procedures.

Disease

There are very few contraindications to performing Primary PCI and a recent study (The Senior PAMI Trial) has shown that PCI remains significantly superior to thrombolytic therapy in patients up to 80 years of age.

Serious complications of AMI such as Acute Mitral Regurgitation and acute Ventricular Septal Defect have been reduced with early intervention and the high mortality associated with their occurrence has been significantly reduced with PCI. Together with haemodynamic support (which will be discussed in the next issue) prompt PCI has also changed the bleak outlook for patients in cardiogenic shock, which condition carried a mortality of greater than 95%. Early institution of these measures is capable of halving this grim statistic.

It makes little sense to spend so much time, effort and money on treating a disease without addressing its prevention and maximising the outcome of its successful treatment.

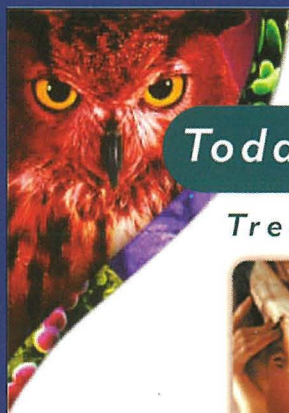


Intra-coronary stents which reduced the incidence of abrupt closure

Health education is essential if any impact on the future health and healthcare of a nation is to be improved. Not only must the individual be informed and educated about healthcare at an early age but this process has to include adults, who have a major role in bringing up children as well as acting as role

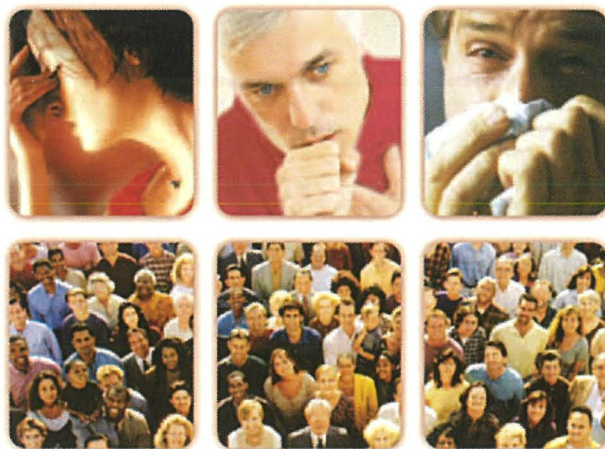
models. Governments, be they local or national, can help by introducing measures that encourage a healthier diet and facilitate the possibility of unencumbered physical exercise for all ages.

Since the beginning of time we have had available a therapy that only recently is being accepted as being of any significant benefit. There exists a four letter word that is almost never seen in medical textbooks or articles. It seems that the use of this word seems somehow unscientific or unrealistic and as a result such bland expressions as 'emotional support' are used. This expression goes nowhere near the actual experience of the word 'love', yet it is a scientific fact that those who experience love both on a personal level as well as in the environment in which they live reduces the likelihood of illness and prolongs life. It really makes living a far more enjoyable experience – it is such a great shame it is not available on prescription! ☑



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[†]Minimizes induction of macrolide type (*erm*_B) resistance in vitro.

