proliferation, while irradiated stents revealed mainly plaque growth outside the stents. Kozuma and co-workers conclude that in this setting with adjunctive beta-irradiation, stenting may no longer play an important role in the prevention of late constrictive remodeling.[13]

In their subtitle, Kozuma and colleagues raise the question whether stenting is still necessary in the setting of catheter-based radiotherapy.[13] We feel that it is definitely premature to question the role of the stent, as there is so much evidence of its benefit. Procedural safety, for instance, has been increased by the use of coronary stents. It may deteriorate, if stenting is avoided whenever possible. Moreover, the breathtaking reduction in the restenosis rate by using Sirolimus-coated stents in the double-blind randomized RAVEL Study.[14] has demonstrated that another powerful player is entering the clinical arena. In the light of the aforementioned arguments we are confident that the stent is here to stay.

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Substantial variations in clinical outcome following hospitalization for heart failure

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In patients with chronic heart failure, a number of trials have shown a significant improvement in survival and a reduction in hospitalization. Based on these encouraging data, different guidelines[1,2] concerning the treatment of patients with chronic heart failure have been published in recent years. Nevertheless the study published by Stewart et al.[3] in this issue shows there still exists important differences in

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outcome, depending on the hospitals to which patients are admitted.

Why is this? There is surely no unique and clear answer, but probably several reasons can be advanced. It can be assumed that good management rests primarily on an accurate diagnosis. The earlier the diagnosis is made and the more adequate the treatment, the better the outcome. However, the diagnosis of chronic heart failure and the assessment of its severity are not always easy. Which criteria to use? The importance of the complaints such as asthenia and dyspnoea (NYHA class) has to be taken into account. But their sensitivity, specificity and prognostic value are not always high, especially when the patient is examined by a general practitioner\cite{4-6}. Therefore we need more objective criteria\cite{7}. Probably echocardiography is the most cost-effective technique for this purpose, but we have to be aware of its limitations, especially in patients with a poor echogenicity. Sometimes it is better to use — or to add — radionuclide ventriculography or myocardial scintigraphy. However, this last method is expensive, not feasible everywhere and difficult to repeat for these reasons. We must also be aware of some pitfalls. Patients can have symptoms of severe heart failure with a near normal systolic left ventricular function and volume but severe diastolic dysfunction. It is still not obvious to what degree functional tests, such as a walking test or the measurement of VO\textsubscript{2} max and/or neuro-hormonal assessment (pro ANP, BNP)\cite{7} add complementary information regarding the diagnosis and prognosis of patients with heart failure, or how cost-effective they are. Moreover, the concordance between these different parameters is not always good, especially in the case of heart failure due to diastolic left ventricular dysfunction\cite{8}.

The aetiology of heart failure may also influence prognosis. Patients with an idiopathic cardiomyopathy have a relatively better outcome than those with an ischaemic cardiomyopathy. The presence of concomitant cardiac disorders, such as associated valvular disease, atrial fibrillation, severe ventricular arrhythmia, or intracardiac thrombus can influence prognosis. The existence of an inflammatory and/or thrombo-embolic state: arterial (TIA, stroke) or venous (deep venous thrombosis, pulmonary embolism), are sources of increased morbidity and mortality. In addition we should not minimize the role of non-cardiovascular associated co-morbidities, such as bronchopulmonary disease, cancer, diabetes in the outcome of these patients.

Finally socio-economic and psychological factors could also pejoratively influence prognosis, as does age. It is generally accepted that the elderly have a worse outcome\cite{9-11}.

But the most important factor remains the efficacy of the therapy\cite{9,12,13}.

One of the important reasons for therapeutic failure in patients with chronic disease is suboptimal treatment. It is estimated that about 50% of patients are not receiving or taking their medication or at least not at the optimal dose\cite{14}.

According to some surveys and our own experience, large differences may exist between the management conducted by a cardiologist, a specialist in internal medicine and a general practitioner (GP). While the cardiologist often follows the guidelines strictly, the GP may be ignorant of them and/or reluctant to prescribe new drugs. In contrast with the cardiologist, the GP prescribes fewer ACEI and beta-blockers or at lower doses\cite{15,16}. GPs sometimes reduce the dosage of these drugs or even stop them when prescribed by a cardiologist. Also GPs sometimes prescribe too high doses of spironolacton when used in combination with an ACEI. He or she often has difficulty in adapting the treatment to the evolution of the disease. Therefore we consider that close collaboration between GPs, specialists in internal medicine or in geriatrics and cardiologists is mandatory and that objective criteria have to be used for the follow-up of the disease.

This may explain why the outcome of heart failure is worse in the elderly\cite{9,10}. Indeed, the elderly are more frequently examined by a GP or a geriatrician than by a cardiologist and therefore the diagnosis is often made later on\cite{17}. In addition, there is greater frequency of associated vascular (TIA, stroke) and non-cardiac co-morbidity. This is why the elderly are often prescribed too many drugs (polypharmacy) with the danger of interaction and side effects, confusion, misuse and lower compliance\cite{18}. This last situation can also result from a poor understanding of the explanations given by the physician, who is sometimes less motivated to treat an older patient with multiple diseases in comparison with a younger patient.

Could these factors explain the variations in outcome following hospitalization for heart failure observed between different hospitals in a same country?

First we have to be aware of the limitations inherent in data collected administratively by ICD codes, as in this study, though the code distribution was similar across the hospitals studied with adjustment for a large number of factors that might influence outcome. It is, however, very difficult to ensure that all the factors are taken into account, particularly the grade of heart failure, the type and severity of ventricular dysfunction, the co-morbidities, the number and type of drugs with their possible

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interactions and side effects which can influence the rate of adverse events. This raises the question of whether the distribution of these various factors was similar in all hospitals. It was anticipated that in smaller non-teaching hospitals the patients would be older, and have more co-morbidities which may influence the rate of readmissions and mortality. Therefore it would be interesting to have more information on the Scottish system of hospitalizations. Are the patients referred to hospital simply as a function of geographic location or according to other criteria, such as the severity or complexity of the diseases?

It is also possible that in smaller less specialized hospitals patients are often admitted at a later stage of the disease, and we know these patients have a worse outcome.

Differences between hospitals regarding the diagnostic approach, the therapy such as the use of ACEI, beta-blockers, spironolacton, the dosage and combinations of diuretics, the use of non-steroidal antiinflammatory drugs are also important. As already stated, differences might vary according to the kind of physician in charge of the patient: cardiologist, specialist in internal medicine, geriatrician, GP. Taking into account that Scotland, as in England and Ireland, has one of the lowest densities of cardiologists in the European Union\textsuperscript{[19]}, it may be that only in the teaching and larger hospitals will patients have easy access to cardiologists. As already published in other papers on patients with myocardial infarction, this could have important implications regarding the efficacy of the management and on the subsequent outcome for patients with heart failure. Nevertheless this is an interesting paper because, as far as we know, it is the first study to establish interhospital variations in mortality and readmission rates, even if it raises more questions than answers.

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