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Spotlight: Josep Comin-Colet, MD



“Intravenous Iron Has Opened Up a New Therapeutic Possibility for Heart Failure That Is Very Exciting”

Josep Comin-Colet, MD, consultant in cardiology and head of the Heart Failure Programme, Department of Cardiology, Hospital del Mar, Barcelona, Spain, and associate professor of the Universitat Autònoma de Barcelona, talks to Jennifer Taylor, BSc, MSc, MPhil.

Large trials are currently investigating whether erythropoietin has a positive impact on hard endpoints in patients who have advanced heart failure as a result of research started by, among other investigators, Josep Comin-Colet, MD, consultant in cardiology and head of the Heart Failure Programme, Department of Cardiology, Hospital del Mar, Parc de Salut Mar, Barcelona, Spain, and associate professor of the Universitat Autònoma de Barcelona. In 2004, he conducted a small pilot evaluation, using erythropoietin and intravenous iron to correct anaemia in elderly patients with advanced chronic heart failure and cardiorenal anaemia syndrome, and he found that the treatment yielded benefits beyond improved haemoglobin levels.¹ Symptoms improved, prognostic markers such as N-terminal fragment pro-B-type natriuretic peptide decreased, and cardiovascular readmission decreased, although mortality did not decrease.

After this work, Dr Comin-Colet was a member of the steering committee of the Ferinject Assessment in Patients with Iron Deficiency and Chronic Heart Failure (FAIR-HF) study, which evaluated the effects of intravenous iron against placebo in patients with iron-deficient heart failure. The study showed that intravenous iron improved symptoms, quality of life, and functional capacity in patients with chronic heart failure and iron deficiency with or without anaemia.² “It really changed the way we look at anaemia,” says Dr Comin-Colet. “It has opened up a new

therapeutic possibility for heart failure that is very exciting, and now there are a lot of studies going on trying to find out the pathophysiological basis of this.” Dr Comin-Colet and his colleagues have also discovered that, among patients undergoing elective valve replacement, a preoperative haemoglobin value <12 g/dL is a risk marker of in-hospital mortality and serious adverse outcomes.³

Responsible for Setting Up a Model Heart Failure Programme Integrated With Primary Care, and a Prospective Registry of Chronic Heart Failure Patients, Including a Large Biobank With DNA and Blood Samples for Biological and Epidemiological Research

In 1992, Dr Comin-Colet graduated from the School of Medicine, University of Barcelona. At that time he had little interest in completing the examination to secure a place on a specialty training scheme. He wanted to see patients and get hands-on experience. “The idea of sitting around for 1 year studying for this exam was not that exciting, so I applied for a house officer post in the England, and I was accepted,” he says.

From 1993 to 1994, Dr Comin-Colet worked for the English National Health Service as a house officer in internal medicine with a special interest in cardiology at Scarborough General Hospital, Yorkshire, England. He became so interested in cardiology that he decided to return to Spain, pass the exam, and apply for a cardiology training

On other pages...



Pioneer in Cardiology: Anders Persson MD, PhD

Professor Persson, director of the Centre for Medical Image Science and Visualisation, Linköping University and University Hospital, Linköping, Sweden, has spent many years developing innovative computed tomography and magnetic resonance imaging techniques to make image science more clinically relevant, especially in the diagnosis of coronary artery disease, and is renowned for his work on virtual autopsy. **See page f100**





In 2001, Dr Comin-Colet moved to Hospital del Mar (bottom photo), a teaching hospital in Barcelona (white arrow in top photo indicates its location in Barcelona; the red arrow points to Barcelona Biomedical Research Park), and took responsibility for developing its small heart failure clinic set up by Jordi Bruguera, MD. Dr Bruguera's intention was to expand the programme and integrate it with primary care. Dr Comin-Colet believes that it now delivers the best heart failure programme in Spain, and its prospective registry includes >800 patients with chronic heart failure together with a large biobank of DNA and blood samples for biological and epidemiological research. Photographs courtesy of Dr Comin-Colet.

scheme. As a result, from 1996 to 2001, he worked as a resident postgraduate trainee in cardiology in the Department of Cardiology at Hospital de Bellvitge, a 1000-bed tertiary care hospital in Barcelona. He developed his interest in heart failure at the Heart Failure and Cardiac Transplant Unit, run by Nicolás Manito, MD, who assisted him in becoming a member of the principal heart failure groups in Spain. Since 2005 he has also been a member of the Heart Failure Association of the European Society of Cardiology.

Dr Comin-Colet then moved to Hospital del Mar in 2001 to develop the simple heart failure unit, which now includes acute beds, an outpatient clinic, a telemedicine programme, heart failure nurses, case managers, pharmacists, psychologists, a rehabilitation programme, and integration with primary care, together with a prospective registry of patients with heart failure and a biobank of frozen DNA and blood samples. He says, "It has all been possible because Dr Bruguera believed in me and has given me a lot of support." The programme has reduced mortality and readmission and improved quality of life.⁴

Together with the Spanish Society of Cardiology, Dr Comin-Colet has set up a training programme to help other cardiology departments implement similar units, and over the past 3 years >25 programmes have been created. Common features of the model are that it is multidisciplinary, involves heart failure nurses, and is integrated with primary care.

"As Patients With Heart Failure Are Getting Older, Patient-Centred Outcomes Are Becoming More and More Important"

During his fourth year of cardiology training, Dr Comin-Colet became interested in epidemiological studies. No structure for clinical research existed, so he read enough about statistics, epidemiology, and methodology to set up his own projects—a few simple studies evaluating changes in remodelling after treatment with beta-blockers.

When he moved to the Hospital del Mar, Dr Comin-Colet set up an ambitious prospective registry of patients attending the heart failure programme, working within the Research in Inflammatory and Cardiovascular Disorders Programme at The Research Institute of the Hospital del Mar under the direction of Jaume Marrugat, MD, PhD, and Roberto Elosua, MD, PhD. Today, it contains >800 patients with frozen DNA and blood samples in one of the largest biobanks of patients with chronic heart failure in Spain. It is being used to pursue several lines of research, including the influence of genetic polymorphisms on the risk of anaemia or iron deficiency, and descriptive studies to evaluate how quality of life and functional capacity are affected by iron deficiency and anaemia in patients with heart failure.

Dr Comin-Colet also coordinated a multicentre trial to validate the Kansas City Cardiomyopathy Questionnaire in the Spanish heart failure population. This well-known tool was designed to evaluate quality of life in patients with chronic heart failure. The study concluded that it was a valid, reliable, and responsive tool suitable for evaluating quality of life in Spanish patients.⁵ Dr Comin-Colet says, "It was relevant because, as patients with heart failure are getting older and we have to reduce morbidity and mortality with new treatments, trying to evaluate the influence on patient-centred outcomes is becoming more and more important for practising doctors. So we need to have valid tools to evaluate quality of life."

In addition to running the registry studies, Dr Comin-Colet is in charge of the quality of life substudy in the FAIR-HF trial. Patient-centred outcomes are a characteristic feature in much of his research. Other ongoing research projects include a Spanish multicentre study designed and coordinated by Dr Comin-Colet to evaluate the use of intermittent ambulatory levosimendan, an inotropic drug, for advanced chronic heart failure to see whether there are significant changes in biomarkers and quality of life.

Comparing the Outcomes Using Telemonitoring and Video Conferencing in High-Risk Patients

Since the heart failure programme was implemented, mortality has been reduced >50%, and readmission has also been dramatically reduced. Dr Comin-Colet says, "The challenge now is to see whether there is any room on top of a very intensive heart failure programme for improving mortality and morbidity."

In 2008, he and his colleagues at the heart failure clinic began working with a telecommunications company to develop a telemedicine solution to monitor patients with



Above, Dr Bruguera and Dr Comin-Colet with the team of the Heart Failure Programme at the Hospital del Mar, Barcelona, Spain. Right, Dr Comin-Colet with the telemedicine team at the Barcelona Biomedical Research Park near the Hospital del Mar, where he develops his research career as a member of the Programme of Research in Inflammatory and Cardiovascular Disorders. Photographs courtesy of Dr Comin-Colet.



chronic heart failure at home, and they recently launched a study to compare the outcomes using telemonitoring and video conferencing in high-risk patients against the usual care provided by the heart failure programme.

The idea for the telemedicine study developed when Dr Comin-Colet spent a month as visiting faculty at the Roger C. Lipitz Center of Integrated Health Care, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, in 2007. He was invited to share Hospital del Mar's experience of managing patients with chronic heart failure in a programme integrated with primary care. At the same time, he gained experience in the new models used in Baltimore to manage patients with chronic conditions. In particular, he realised that the nurses in Spain could play a greater role, and he became aware of the developments in telemedicine for chronically ill elderly patients who find it difficult to visit the outpatient clinic, whose signs and symptoms can be monitored at home via a telephone or video conferencing. Together with his mentor at Johns Hopkins University, Chad Boulton, MD, MPH, MBA, professor of public health, Dr Comin-Colet then organised a course on managing patients with chronic conditions, which was held in Barcelona 6 months later.

Dr Comin-Colet is currently working on a PhD. From a personal point of view, he has learned that "if you want to have a successful career in research, you really need to programme your research activity like you were programming your outpatient clinic," he says. It requires set hours every week to think, write, and perform the research, something that is not routine practice for clinical research in Spain. However, Dr Bruguera was receptive to the idea, and they have implemented some new systems.

Dr Comin-Colet's approach to patients was influenced by 2 young doctors he met early in his career. After medical school he met Jordi Mascaro, MD, who had just finished his internal medicine training scheme in Barcelona, who emphasised that patients are not just a "disease," but

an entire person in a social environment, and that being empathetic was the best way to get close to patients and solve their problems. The other young doctor was a registrar from India, Charanjit Khurana, MD, who worked with him in Scarborough, who impressed him with his respect and empathy for patients. Sometimes Dr Comin-Colet was overwhelmed by the amount of work in Scarborough, but Dr Khurana encouraged him to persevere. He says, "He told me that 'if you can do this work, you can do anything.' So I decided, if I can overcome this, I am sure I am going to be successful in other objectives I plan in my life."

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