ACCA Masterclass

The Acute Cardiovascular Care Association (ACCA) gathered professionals, experts and key opinion leaders to lead the way to the future in Acute Cardiovascular Care.

The ACCA organized its first Masterclass in the field of Acute Cardiovascular Care, in March 2017 at a 2-day expert meeting, gathering high-level professionals to discuss, exchange, and debate on the current state of practice, advancement, and future challenges specific to the acute areas of cardiovascular care.

Programme directors Prof. David Walker (ACCA Board member and committee chair) and Prof. Christian Vrints [Founder of ACCA, ex-officio Board member and European Heart Journal—Acute CardioVascular Care (EHJ-ACVC) editor-in-chief] selected focused topics covering the critical phase of managing patients arriving at hospital with an acute cardiac event: Chest Pain; prehospital and in the emergency department; out of hospital cardiac arrest (OHCA), cardiogenic shock, acute heart failure, and mechanical circulatory support; alternating debate sessions with lectures and case-based discussion. The sessions comprised an expert panel, and the setup aimed to facilitate free discussion, thereby making this event a unique opportunity for interaction and discussion among experts regarding optimizing patient outcomes, but additionally to challenge best practice, identify gaps in evidence and brainstorm regarding future trends.

The objective was to engage the audience in strategic discussions, update their knowledge with new directions and call on their contribution to the elaboration of reference papers and recommendations for the future of the specialty.

After 2 days of intense debate and discussions, the ACCA board extracted the following “Take home messages” that will serve to question the current practice, provide guidance to necessary studies and guidelines and bring a new vision regarding best treatment for patients with acute cardiovascular disease.

**CHEST PAIN—Expert Debate Session**

Chairs: M Lettino, H Bueno, and K Huber

Expert Panel: M Lettino, H Bueno, P Goldstein, NL Mills, K Huber, F Breuckmann, U Zeymer, C Müller

Report by Maddalena Lettino: This session dealt with the diagnosis and management of chest pain—and in particular the benefits of chest pain units which have developed in some countries.

Clinical evaluation of a patient with chest pain is the first step towards the correct final diagnosis; typical chest pain is relatively easily recognizable, while atypical chest pain is a much more questionable definition and opens to misdiagnosis.

Electrocardiogram (ECG) recording remains the first-line diagnostic tool: the earlier the better. It is therefore highly recommended to take an ECG in the pre-hospital setting.

Biomarkers are the second step:

- The opportunity to check for troponin in the pre-hospital setting is questionable. In case of a very early diagnosis of acute coronary syndrome it could theoretically help to bring the patient as soon
as possible to hospitals with cath lab for early coronary angio-

graphy (very early risk stratification, probably very few cases) but the

risk of false negatives could be quite high in very early presenters.

- Biomarkers are key in confirming diagnosis of myocardial infarction

(MI): ED doctors and cardiologists should know which test is avail-

able in their hospital and select the appropriate rule-in/rule-out

algorithm. This is in fact crucial in shortening waiting times in the

ED and in containing healthcare costs.

- Biomarkers identify those high-risk patients who benefit from an

early/intensive interventional strategy. The interpretation of bio-

marker values should not be done in isolation. These can only be

done correctly together with an adequate clinical judgment and

accurate ECG interpretation.

Chest pain units are present only in few European countries

(Germany, Switzerland), where they have undergone a certification

process. We do not necessarily need chest pain units everywhere,

but there is a need for shared protocols and policies between

Emergency physicians and Cardiologists.

**OUT OF HOSPITAL CARDIAC ARREST (OHCA)—Expert Debate Session**

Chairs: C Hassager, P Goldstein, E De Maria

Expert panel: C Hassager, E De Maria, P Goldstein, J Belohlavek,

A Cariou, SL Leonardi, FL Henriksen

Report by: Christian Hassager

The evidence base for OHCA manage-

ment is currently inadequate. This session

focused on what we know and the larger

area that currently is managed by expert

opinion without much evidence. New ther-

apies were discussed.

Nothing of what we do is really proven in

good randomized trials—yet.

However: Never give up when a OHCA

patient arrives at the hospital.

Our ability to prognosticate within the first hours (days?) is poor.

pH and lactate are related to mortality—but the overlap between

survivors (with good neurological function) and those who die is con-

siderable. Even patients with very low pH (i.e. <6.5... ) may survive.

Very sick patients without return of spontaneous circulation may

need extracorporeal mechanical oxygenation (ECMO) extracorporeal

cardiopulmonary resuscitation (eCPR) to survive. Patients with ‘refrac-
tory cardiac arrest’ may be salvageable if we do everything: angiography

and percutaneous coronary intervention (PCI), targeted temperature

management, eCPR, etc. In Prague, currently 22% of these patients sur-

vive. They are doing a randomized trial on ‘doing everything’ vs. usual

care—93 out of 160 refractory OHCA have been randomized so far—

we will have to wait 2 more years for the final results.

We also should be careful when we prognosticate later on. We

must use a multi-modality approach (Clinical, EEG, somato-sensory

evoked potentials (SSEP), CT, MR, etc) and we should not do this

before 72 h.

A severe systemic inflammatory response syndrome response is

often seen in the first days after an OHCA. We do not know how to

treat it. In the first 3 days, the patients die of multi-organ failure and

cardiogenic shock (CS)—later-on neurologic causes of death pre-

dominate.

Early response from lay persons/minimally educated first respond-
ers may be the key to a better prognosis. The improved survival that

we have seen during the last 1–2 decades is perhaps mainly due to

two things:

1) More patients are resuscitated faster with shorter no-flow time and

2) At the hospital we do not give up during the first 24 h anymore.

**ACUTE HEART FAILURE—Meet the Experts Session**

Chairs: C J M Vrints, J Masip, and O Dar

Report by Christiaan Vrints

An update was provided on the diagnosis of patients with suspected acute heart failure and the results of clinical trials with innova-
tive therapies for acute heart failure were discussed.

In patients who present with acute dys-

pnoea it may be very difficult to disentangle

acute heart failure and chronic obstructive

lung disease because of overlap in signs and

symptoms. An ECG, blood tests and a chest X-ray on admission fre-

quently are insufficient to provide an adequate diagnosis. Echocardiography and spirometry allow a more precise diagnosis but are

not always readily available or feasible in emergency situations.

Urgent measurement of plasma brain natriuretic peptide (BNP)
can be helpful if the diagnosis is uncertain. Most dyspnoeic patients

with acute heart failure have BNP values above 400 pg/mL, whereas

values below 100 pg/mL have a very high-negative predictive value

for heart failure as a cause of dyspnoea. Plasma BNP concentrations

between 100 and 400 pg/mL are less sensitive or specific for diagnos-
ing or excluding acute heart failure. Other diagnoses should there-
fore be considered in patients with plasma BNP concentrations in

this range. When the diagnosis of acute heart failure is confirmed by

BNP levels above 400 pg/mL the underlying heart disorder should

always be determined by echocardiography and additional investiga-

tions.

Moreover, precipitating causes should always be identified based

on CHAMP: acute Coronary syndrome, Hypertensive emergency,

Arrhythmia, acute Mechanical cause and Pulmonary embolism.

Several innovative pharmacological therapies have been tested in

clinical trials with great disappointment. Mechanical approaches to

circulatory and renal support are being examined closely but not yet

with convincing results.

In the absence of a new game changing therapy for acute and

chronic heart failure, the major message is therefore to apply more

consistently, more efficiently and without any delay the therapies that

we know are working in short and long-term management of acute

and subsequent chronic heart failure. A recent audit on the manage-

ment of acute heart failure in the UK certainly demonstrated that

much progress can be obtained by a better and more systematic

application of the ESC guidelines.
CARDDIOGENIC SHOCK—Expert Debate Session

Chairs: J Stepinska, S Halvorsen, and T Gershlick

Report by Janina Stepinska
This session looked at CS. The mortality in CS is still very high. The most frequent cause of CS is acute MI (AMI). Mortality in CS complicating AMI is very high: 40-70% despite PCI, inotropic therapy and mechanical support.
Randomized controlled trials are lacking; we have no clear guidelines.

The Holger’s Thiele trial—CULPRIT-SHOCK address the question of optimal revascularization strategy in patients with multi-vessel disease and acute MI complicated by CS. CULPRIT-SHOCK is a controlled, international, multi-centre randomized open label trial. The study compares two strategies: immediate multi-vessel PCI in patients with CS complicating the AMI vs. only culprit lesion PCI. The results are expected before the end of the year.

The risk prediction of short-term mortality in CS was discussed based on the Card Shock trial. Card Shock was a prospective, observational, European, multi-national cohort study prospectively enrolled more than 219 points. Study was conducted between 2010 and 2012. ACS aetiology, age, previous MI, CABG, confusion, low-left ventricle ejection fraction and blood lactate are independently associated with increased mortality.

Among vasopressors and inotropes, adrenaline alone or in combination is independently associated with worsening of cardiac and renal function and 90-day mortality. In the Card Shock trial, the combined use of noradrenaline with dobutamine or noradrenaline with levsimendan was associated with better prognosis. The randomized controlled studies in the field of vasopressors/inotropes are needed.

Mechanical ventilation is generally recommended as a ventilatory support in CS, but non-invasive ventilation in CS seems to be an option.

There is a need for a consensus document regarding the whole spectrum of the CS process and interventions.

MECHANICAL CIRCUITATORY SUPPORT IN CARDIOGENIC SHOCK—Meet the Experts Session

Chairs: S Price and R Trimlett
Report by Susanna Price
The session presented the current state-of-the-art in acute mechanical circulatory support from the perspective of the cardiac surgeon and the interventional cardiologist, as well as a vision into the future for challenges with respect to these innovative supportive techniques.

What comes next?
ACCA will now evaluate the outcome of the discussions from this first masterclass and see whether the format is popular for future meetings. Initial feedback is positive about the venue and discussions and there seems to be enthusiasm for more interactive sessions going forward.

Accreditation:
The ACCA Masterclass was accredited by European Union of Medical Specialists (UEMS)- European Accreditation Council for Continuing Medical Education (EACCME®) for 12 CME credits.

Audience profile
A well-balance age spectrum with:
• 36% above 50 years.
• 30% 40–50 years.
• 34% under 40 years.

Gender: Female: 31% vs. Male: 69%.
Acute Cardiovascular Care Association: A unique platform for multi-disciplinary exchange

The mission of ACCA is to improve the quality of care and outcome of patients with acute cardiovascular diseases, encompassing the complete care of patients from first medical contact until patient stabilization.

ACCA is the first and unique platform of scientific exchange in the field where a multi-disciplinary team can share knowledge and enhance educational skills towards one single goal.

Learn more about the association and its educational initiatives: www.escardio.org/ACCA.

Access Masterclass resources

All scientific resources are available on the ACCA web site. https://www.escardio.org/Sub-specialty-communities/Acute-Cardiovascular-

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Journal Metrics, a series of 4 articles

Journal Metrics I

David Crotty PhD introduces metrics: the different methods for measuring and ranking journals

Journal metrics play a large role in the academic career advancement and funding process. While it is universally acknowledged that the best way to evaluate the work of a researcher is by building a deep understanding of that work and its context in the field, in practice, this is simply not possible to achieve at any sort of scale. Instead we look for numerical indicators of research ‘impact’, a loosely defined concept that varies from field to field.

Scale is an important factor in the use of journal metrics. When a tenure track position or grant funding is offered, the resulting stack of applications can be daunting. Reading a single paper from each applicant would be a full-time job, let alone building a deep appreciation for their body of work as it relates to the big picture. Evaluation is often done by those without domain-specific knowledge. Administrators, grant officers, and librarians cannot be expected to analyse high-level research. Researchers are often asked to serve on search committees for departments different from their own.

Metrics are essentially a shortcut meant to alleviate these problems of scale and expertise, quick methodologies meant to give one a handle on the quality of work done by an individual or described in a article. At best, these should be seen as approximations, starting points for building that deeper knowledge, but unfortunately, the use of journal metrics has taken on something of a life of its own, and the means are now frequently mistaken for the ends.

Goodhart’s Law (https://en.wikipedia.org/wiki/Goodhart%27s_law) suggests that once you make a measurement into a goal, it ceases to be a useful measurement, and that is what has happened with the Impact Factor, the main metric in use for academic evaluation. The misuse of this tool, designed to help libraries make sound subscription decisions, is indicative of the dangers of over-reliance on numerical rankings. When funding, tenure and hiring committees set (often informal) Impact Factor targets for success, researchers alter their behaviours to maximize performance in that metric. The pursuit of scholarly excellence instead becomes the pursuit of a number.

When we use a metric, we need to be careful that we really understand what’s being measured and what it’s telling us. While metrics are valuable and can provide useful information, each metric has its own flaws and biases. A measurement like the Impact Factor is performed at a journal level, so the worst article in that journal has the same Impact Factor as the best. The h-index, as another example, favours older researchers over younger ones. We must take great care to ensure that the stories we are telling with metrics are accurate.

And perhaps most importantly, we must understand that we are asking qualitative questions: is this work any good; is this discovery important; does this researcher make original and significant contributions? As scientists, we strive for objectivity, but is that possible to achieve when asking for a subjective opinion about someone’s work?