

Cardiogenic shock 2022: Quo vadis...? Impressions/voices from the Critical Care Clinical Trialists (3CT) Workshop

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Between 23 and 25 June 2022, the fourth Critical Care Clinical Trialists (3CT) Workshop took place in Washington DC (USA) at the French Embassy (Figure 1). An international and multi-disciplinary group of experts (clinical trialists, clinicians of different specialties, epidemiologists, patient representatives, regulators, and industry representatives) met to discuss approaches to optimize trial design in the field of cardiogenic shock (CS). SciencePulse invited Prof. Alexandre Mebazaa (Paris, the workshop director), Dr David Baran (Cleveland, co-author of the SHOCK Stage Classification Expert Consensus Update 2022), and the patients' representative Rhonda E. Monroe to share their thoughts.¹

Prof. Alexandre Mebazaa

What do you think are the main unmet needs for patients with cardiogenic shock?

Today, there is a huge need to homogenize management of CS. It is one of the diseases with the highest mortality, at least 35–50% depending on centres, countries, and the stage of the disease. When talking to physicians all around the world, I was surprised to learn that in CS, international standardized procedures to treat patients are completely lacking. This is in contrast with other cardiac diseases, such as acute coronary syndrome, where the resident or fellow immediately brings up a flow chart that is known to anyone involved in the care of these patients. Each institution treats its patients with CS according to their own expertise or opinions and with high inter- and even intra-centre variability. This emphasizes the huge need to homogenize procedures. In order to do so, the set-up of good clinical trials is necessary to support protocolized patient care.

What is your motivation in organizing meetings such as 3CT?

I gained specific interest in organizing this meeting when travelling around Europe and the USA. Throughout my travels, I noticed that money to perform trials in CS was not invested proportionately

to the funds invested in other cardiac diseases. This is the result of a number of factors such as lack of approval by the institutional review board of FDA and lack of patients' consent. I also found that the interest of physicians and regulators is quite divergent. In the USA, there is more interest in device therapy and the FDA device department is highly motivated to reduce mortality in CS; whereas in Europe, the trials are more focused on inotropes and the cathlab setting. About 6 years ago, it occurred to me that we really need to put all those experts around the same table to discuss management in CS and to illustrate all ongoing trials and learn from one another.

Dr David Baran

What are the main changes in the updated SCAI classification compared with the original version?

The most important changes include:

- The *colour gradations of the pyramid* (Figure 2A), making it intuitively obvious that not all CS patients of each class are the same and reinforcing the fact that CS is a syndrome covering a large spectrum of severity.
- The *3-axis model* (Figure 2B), which increases the understanding of CS via integration of shock severity (SCAI Stage), risk modifiers (cardiac arrest, age, co-morbidities, prior functioning), and phenotype/subphenotype (e.g. ischaemic, non-ischaemic).
- The *arrest modifier* was narrowed down to those patients with suspicion of significant post-anoxic brain damage.

What is the current and future impact of the SCAI classification for the cardiogenic shock world?

Currently, the SCAI classification gives us a common language, which is increasingly adopted as means of conversation among healthcare providers. More education and better implementation are needed but we

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Figure 1 Group picture from the 3CT meeting, French Embassy, Washington DC (USA).

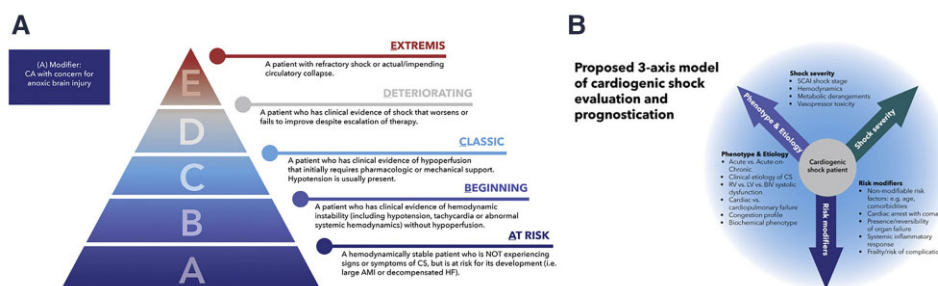


Figure 2 (A) Updated SCAI SHOCK classification pyramid. (B) Three-axis model of cardiogenic shock. From Journal of the Society for Cardiovascular Angiography & Interventions 1 (2022) 100008. AMI, acute myocardial infarction; CS, cardiogenic shock; HF, heart failure; SCAI, Society for Cardiovascular Angiography and Interventions.

are off to a very good start. In the future, a broadened use to pre-hospital providers and a wider adoption by nursing would be desirable. For patients with acute myocardial infarction complicated by CS, use of the SCAI stage by pre-hospital providers could guide them to transport patients in higher stages of shock to specialized 'shock centres'. Furthermore, the SCAI stage might be used prospectively in trials.

Do you think dynamic changes in SCAI classification rather than SCAI stage at admission can guide us in managing cardiogenic shock patients?

I think both are critically important. We showed in our prospective registry work that the SCAI shock stage assessed at admission by a

shock team is a powerful predictive variable for 30-day mortality. Furthermore, evolution of the patient's SCAI stage over the first 12–24 h yields additional prognostic information.

Rhonda E. Monroe

What are in your opinion the main unmet needs for cardiogenic shock patients?

I believe that the identification of CS in patients continues to be a major issue. Mortality remains unacceptably high in this patient population. Oftentimes clinicians recognize that the patient has shock much later in the diagnostic and therapeutic workup. Subsequently, therapies may be delivered too late to be lifesaving. While there have been

advances made regarding medical therapies and mechanical devices to treat CS, timely recognition of CS is essential for the prognosis of the patient. From the patients' perspective, doctors just need to be aware!

You are planning a 'consider shock' initiative. Can you tell us more about it?

The SCAI shock classification is a great tool that summarizes the signs and symptoms of CS. Of course, people who are passionate about CS are familiar with it. However, I am afraid there are many doctors and nurses out there who are unaware of it simply because they do not have the time or opportunity to attend conferences or read papers to stay abreast of diagnostic advances. To have practical impact, we have to increase awareness and spread it beyond our community: to primary care hospitals, emergency rooms as well as EMS.

Therefore, I am planning to write a proposal for a 'consider shock' initiative, apply to get some funding, and then go out and spread the word!

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Reference

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