


PGDIP/MSC DL PT EMERGENCY AND RESUSCITATION MEDICINE - 2021-22

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MODULE 2 FORUM

INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

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INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!



by [Ben Stretch](#) - Thursday, 6 January 2022, 6:10 PM

Hello everybody,

Find attached, an **interactive case based discussion for Module 2**, focussing on the management of Cardiogenic Shock. This case is based on a common and **important condition with a high mortality** which is becoming increasingly rare in the district general hospital setting. Please take the time to read the case, look at the images and **post answers to the questions in this forum** and together we can devise a management plan for this case. I'm also interested in your **own experiences** in managing similar cases, or any questions you might have.

As an introduction, my name is Ben and I'm an Honorary Clinical Lecturer on this Masters degree course and I've been asked to design case based discussions for the online forum in order to emphasise how the concepts in the course translate into clinical resuscitation. I am an Anaesthetics Registrar in London with an interest in Physiology and Resuscitation, particularly where these two overlap.

I look forward to hearing your thoughts on the case!

 [Module 2 - Cardiogenic Shock 06.01.21.pdf](#) 

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Zahra Rahman](#) - Saturday, 8 January 2022, 7:33 PM

Hi Ben, Thanks for sharing the interesting case and I'm glad you're allowing us the chance for this discussion. Here are some of my thoughts on the management options for the case. Would be interested to know everyone else's opinions as well.

The ECG shows sinus rhythm, HR 75, anteroseptal STEMI, first degree heart block. The acute MI seems to be the likely cause for this patient's cardiogenic shock. The chest XR shows bilateral fluffy infiltrates, cardiogenic pulmonary edema suggesting left heart failure.

Management options and considerations:

Airway/Breathing:

- NIV- BiPAP for improving both cardiac function as well as the hypoxemia, hypercarbia
- Endotracheal intubation (if GCS decreases, patient isn't tolerating NIV)
- Aim saturation 94-98, avoid hyperoxia; lower saturation aimed for COPD 88-92% (however as this patient is heavy smoker,

- Bedside echo to evaluate the cardiac contractility; RUSH protocol to assess for other causes for shock
- Fluids (crystalloids) only if there are signs of fluid responsiveness (US might be helpful in assessing right heart volume status)
- Blood Transfusion for Hb<9
- Vasopressors (Norepinephrine, dobutamine, vasopressin); One thought is to give multiple agents at low doses to augment their action while decreasing side effects. I haven't tried that but would like to hear opinions on it
- Monitoring: PiCCO/LiDCO, Pulm artery catheters
- Mechanical circulatory support: IABP, VA-ECMO, Impella device
- Antiplatelet therapy
- Early Revascularization (PCI, CABG, fibrinolytic if PCI unavailable). The goal would be to stabilize the patient with urgency in order to get to this step as soon as possible.

Other:

Blood gas: monitor Lactate clearance, pH, glucose level (Given that he is diabetic on insulin, just want to make sure it isn't too high or low leading to the AMI!)

Vasodilators- Not sure how safely it can be administered in hypotensive patients, would like to hear some opinions on that
Doubt any role of diuretics. Would focus on correcting the cardiac lesion and stabilization of patient.

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Ben Stretch](#) - Monday, 10 January 2022, 8:14 PM

Thank you Zahra for taking the time to write such an excellent reply

I wonder if anyone else has anything they would like to add to your management plan, or that they think is particularly important?

My question for you would be - could you briefly describe the logistics of getting this patient to the Cath lab for PCI in the system you work in?

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Sapna Hajela](#) - Thursday, 13 January 2022, 12:35 AM

Thank you Ben for sharing the case.

Agree that ECG anteroseptal STEMI, first degree heart block with Xray of pulmonary edema. So problem wet and cold:
Zahra mentioned all excellent points.

My thoughts:

1. I would start oxygen via NRBM, morphine for pain (careful dosing), also will add DAPT/. get arterial line for better monitoring of blood pressure in real time and check response to treatment.

2. I would offer Bi-PAP, but given the sweat, clammy, GCS 14, - Would prepare for intubation - Knowing that this patient would likely arrest on intubation, so will be very careful with ICU/anaesthesia team.

3. Bedside ECHO, cautious fluids, noradrenaline.

Cardiac output monitoring- If I am lucky to set up in a DGH emergency department

4. I am also thinking about vasopressin, as it will improve the perfusion, improve pressure without stressing the LV due to afterload.

.

Will activate the PCI team.

and then the entire situation changes.

Thank You,
Sapna

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Ben Stretch](#) - Tuesday, 18 January 2022, 4:20 PM

Thanks Sapna, some excellent points;

I agree that this patient is heading towards mechanical ventilation - what strategies can we use to avoid cardiac arrest on intubation?

The logistics of getting to the cath lab are challenging - firstly the interhospital (or pre-hospital) transfer, then stabilising the patient enough for an angiogram (which requires a compliant patient lying flat!).

In the next few days I'll post my thoughts on the case, and a step by step guide to improving cardiac output - last chance for any further thoughts, questions or personal experience!

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Sapna Hajela](#) - Monday, 24 January 2022, 12:00 PM

Hi Ben,

The strategy to avoid cardiac arrest on intubation would be - to select cardiac friendly induction drugs - My choice would be low dose ketamine and rocuronium for NMBD.

Also, ensuring the MAP is >65-70 before starting the induction. I would keep push dose pressors ready, diluting 1ml of adrenaline 1:10,000, which is 100mcg, in 10ml of normal saline, which would give 10mcg/ml.

Please share your experience.

Best Wishes,
Sapna

A strategy once the airway is secured, patient stable and prepared to scoop & run to PCI if logistics allows.

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RE: INTERACTIVE CASE BASED DISCUSSION - PLEASE JOIN IN!

by [Ben Stretch](#) - Wednesday, 26 January 2022, 8:02 PM

Hi everyone thanks for your input

Find attached a PDF for a more detailed summary of my thoughts - however I will post a more succinct answer here

1. Prepare for intubation, time is myocardium so needs hyperacute transfer and PCI, won't tolerate interhospital transfer or lying flat for PCI



2. Cardiac output can be improved by optimising;
- HR (60-100bpm) and rhythm (sinus) - really important as these REDUCE myocardial oxygen demand

3. Awake arterial line (this will be really useful) - fentanyl / midazolam (ketamine fine but will increase myocardial oxygen demand at a time of poor O2 delivery), rocuronium RSI

4. May be a candidate for urgent mechanical support around the time of arrival at cardiac centre, most commonly VA-ECMO

Best of luck for Module 3 and feel free to get in touch with any further questions or thoughts of your own

Ben

 [Module 2 - Cardiogenic Shock - Answers.pdf](#) 

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