Module 3
Case Studies/Answers

ARCTIC CIRCLE™
CLINICAL RESOURCE PROGRAM
Disclaimer

• These are theoretical cases for educational purposes only. One or more of the answers may apply. Patients and conditions may vary, resulting in additional variations.
Case Study 1

A patient is admitted to the unit and the ArctiC Sun® temperature management system is set to cool the patient to 33°C. The patient’s starting temperature was 37.1°C, but is now 32.3°C (3 hours later). The patient was medicated at the beginning of therapy with a Versed drip. The patient started to shiver at 35.6°C and was given a bolus of Vecuronium (neuromuscular blockade). Nothing else has changed with the patient’s drug regime. He remains on low dose Vasopressin for BP control.

What questions will you ask regarding the overshoot?
Answer

• Did you verify that the patient temperature was correct?
• What is the water temperature? (It should be rising to warm the patient back to target)
• What are the Patient Trend Indicator arrows doing? (Remember there is a 5 minute delay but you want to see the arrows trending upward to illustrate the patient is warming)
• Did the patient experience hemodynamic changes? (This can lead to movement between compartments and the cool blood rushing to the core and leading to overshoot)
Case Study 2

A patient is admitted with a temperature of 39.8°C. The staff has been attempting to cool this patient for about two hours to a target temperature of 37°C, so far the temperature has only dropped to 38.8°C.

What could be the issues?
Answer
(one or several answers may apply)

• Not enough coverage (ensure all four pads are being used or for obese patients, Universal pads have been added)
• Flow rate is <2.3L/min
• Patient is generating heat from shivering
• There is an issue with the chiller (ensure water temperature is < 10°C to ensure the device is working properly)
Case Study 3

A patient in your unit is being maintained at normothermia with the ARCTIC SUN® temperature management system. You receive an Alarm 14.

What could be the issues?
Answer

- Alarm 14: Patient temperature 1 probe out of range
  - Temperature probe may be dislodged
  - Temperature probe may be in Temperature 2 port instead of Temperature 1 port
  - Temperature probe may be defective
  - Connection between temperature probe and cable may be loose
  - Temperature cable may be damaged
Case Study 4

You are cooling a patient on the ARCTIC SUN® temperature management system to a target temperature of 33°C. After returning from lunch break, you find the water flow has dropped to 1.7L/min.

What could be the issues?
Answer

• One of the pads is damaged or not connected properly to the manifold and air is leaking in
• There is a kink in the line
• There is a problem with one of the valves (you will need to contact your Hospital Biomed Department)
A patient is being cooled on the ARCTIC SUN® temperature management system to normothermia. The patient returns from a procedure, and as you walk by the room a half hour later, you notice the patient’s temperature at 37.9°C.

What could be going on?
Answer

• *CONTINUE CURRENT PATIENT* was not reactivated upon return to unit
  – Verify with flashing *ARCTIC SUN®* temperature management system icon and *CONTROL PATIENT* window is pulsing
Case Study 6

One of your colleagues calls you over to her patient’s bedside. She started rewarming her patient at 0.25°C/hr but after 2 hours, her patient has already warmed a full degree.

What could be the issues?
Answer

• The patient may be generating heat from a fever or shivering
  – You will see arrows trending upward on the Patient Trend Indicator
  – You will see the water temperature drop to address the increase in heat
  – Identify the issue and treat accordingly