DukeMedicine

Division of Cellular Therapy

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Astotherm Plus Operation

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ABMT-COLL-016
ASTOTHERM PLUS OPERATION

1 PURPOSE

1.1 To describe the procedure for set up and prime of the Astotherm® *plus* blood warmer.

2 INTRODUCTION

2.1 The Astotherm® *plus* blood warmer (BW) is used with the Optia apheresis system to warm the blood being returned to the patient during leukapheresis.

2.2 The use of a BW during leukapheresis is to help warm the blood being rapidly returned to a donor or patient. In addition to preventing the patient from becoming chilled, it also prevents any cardiac arrhythmias that can occur from the rapid infusion of cold, citrated blood into a central venous catheter.

2.3 The BW can be used for patients with cold agglutinin disease (CAD), which is a condition where the body's immune system attacks red blood cells that is triggered by cold temperatures.

2.4 The Astotherm® *plus* works by the dry flow-heating method to efficiently and safely warm blood returning to the patient.

3 SCOPE AND RESPONSIBILITES

3.1 This procedure describes the operation of the Astotherm® *plus* blood warmer.

3.2 During leukapheresis, the apheresis nurse is responsible for the operation and monitoring of the BW during use. The apheresis nurse will load the tubing onto the BW and prime the tubing with saline during the blood cell separator prime. The apheresis nurse will be responsible for quality control of the BW and the corresponding tubing. The apheresis nurse and Attending BMT physician are responsible for donor/patient care during leukapheresis.

3.3 Patients with CAD, the BW is used by the staff nurse. The staff nurse is responsible for the operation and monitoring of the BW. The staff nurse will load the tubing onto the BW and prime the tubing with saline prior to the red blood cell (RBC) transfusion.

4 DEFINITIONS/ACRONYMS

4.1 BMT: Blood and Marrow Transplant

4.2 BW: Blood Warmer

4.3 CAD: Cold Agglutinin Disease

4.4 CMNC: Continuous Mononuclear Cell Collection

4.5 LED: Light Emitting Diode

4.6 PVC: Polyvinyl Chloride

4.7 RBC: Red Blood Cells

4.8 SOP: Standard Operating Procedures

5 MATERIALS

5.1 Astotube® Extension Line

6 EQUIPMENT

6.1 Astotherm® *plus*

7 SAFETY

7.1 Follow all safety-related standard operating procedures (SOPs) and wear all necessary protective equipment when handling potentially hazardous blood and body fluids. These include, but not limited to gloves, gowns, surgical masks, goggles, and face shields.

8 PROCEDURE

8.1 Set Up

8.1.1 Ensure that the BW is plugged into a red power outlet and the orange or blue light emitting diode (LED) is illuminated indicating stand-by status (#1).

8.1.2 Turn on the warmer by pressing the On/Off key (#2). There is a green LED (#3) to the left of it that illuminates when warmer is On Mode.

8.1.2.1 The orange or blue LED (#1) will turn off.

8.1.2.2 The green LED (#3) next to the On/Off key will illuminate and remain steady.

8.1.2.3 The alarm status LED (#11) will flash red.

8.1.2.4 The Start key LED (#5) flashes green.

8.1.2.5 The temperature display turns on (#8) and the alarm sounds.

8.1.3 Select the temperature by pressing the up (#7) /down (#6) arrow keys.

8.1.4 Select the set-point temperature (#10) that is requested.

8.1.5 The actual temperature (#9) will display on the temperature display (#8).

8.1.6 To start heating, press the Start key (#4) for approximately1 second.

8.1.7 The acoustical alarm will turn off.

8.1.8 The green LED (#3) becomes steady.

8.1.9 The yellow alarm status LED (#11) will continue to flash until the actual temperature is approximately 4 °C below the selected temperature.

8.1.10 Record the Quality Control results on *ABMT-EQUIP-001 FRM8 Astotherm Quality Control Record.* Refer to *ABMT-EQUIP-001 Quality Control of Equipment* for additional information.

8.2 Installing the Astotube® Tubing

8.2.1 Astotube® is a sterile infusion extension made from polyvinyl chloride (PVC).

8.2.2 Record the lot number and expiration date of the tubing set on the *ABMT-COLL-019 FRM1 Optia CMNC Run Sheet FRM1* and inspect the package for breakage and discard if not intact.

8.2.3 Refer to Table A for Visual Aids

8.2.3.1 Slide the female luer lock end of the tubing under the rear bracket with the luer end facing to the right side of the warmer (#1).

8.2.3.2 Insert the tubing into the grooves of the BW while winding the tubing around in a counterclockwise direction. Gently pulling on the tubing makes it easier to insert (#2).

8.2.3.3 Make sure the tubing in placed under the front bracket for added security (#3).

8.2.3.4 Attach the return line from the Spectra Optia, refer to *ABMT-COLL-019 Optia Continuous Mononuclear Cell (CMNC) Collection*, to the female luer end of the Astotube tubing.

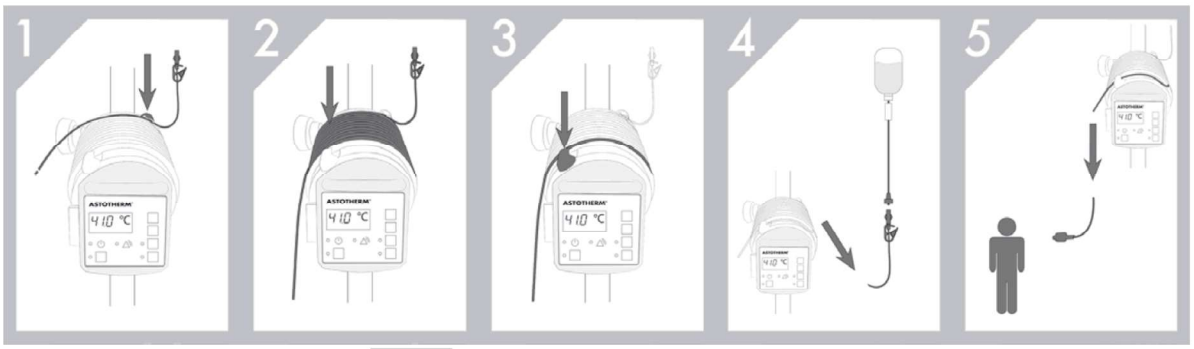
8.2.4 Prime

8.2.4.1 Prime tubing with saline by gravity by opening the blue pinch clamp on the return line (#4). Refer to *ABMT-COLL-019 Optia Continuous Mononuclear Cell (CMNC) Collection*. The saline bag can be squeezed to speed up the prime and ensure that all air is rinsed through the tubing.

8.2.4.2 Close the return line pinch clamp, Refer to *ABMT-COLL-019 Optia Continuous Mononuclear Cell (CMNC) Collection*, when saline has rinsed all the air out of the tubing and the prime is complete.

8.2.4.3 Before connecting the patient, check the access, return lines for air, and remove any air present (#5).

Table A



8.2.5 Ending operation

8.2.5.1 Press the On/Off key (#2) for approximately 1 second. All indicators go out and the standby LED (#1) comes on.

8.2.5.2 Remove the tubing from the warmer and discard. Clean the warmer with the hospital approved disinfectant wipe.

9 RELATED DOCUMENTS/FORMS

9.1 ABMT-COLL-019 Optia Continuous Mononuclear Cell (CMNC) Collection

9.2 ABMT-EQUIP-001 FRM8 Astotherm Quality Control Record FRM8

9.3 ABMT-EQUIP-001 Quality Control of Equipment

9.4 ABMT-COLL-019 FRM1 Optia CMNC Run Sheet FRM1

10 REFERENCES

10.1 *Astotherm® plus Operation Manual*, Rev. 03. Stihler Electronic, Stuttgart, Germany, 2017.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
05	M. Christen	• Section 1: Removed redundant information. • Section 2: Updated Introduction • Section 3: Updated Scope and Responsibilities • Section 4: Updated and defined Acronyms throughout the document. • Section 5 and 6: Updated the name to further clarify the materials and equipment in current use. • Section 8: o Added Visual Aids for better clarification and understand of blood warmer and tubing. o Added reference numbers to correspond with visual aids for better understanding. o Updated the document names and added document numbers. o Defined AstoTube • Section 9: Updated names of related documents/forms • Section 10: Updated Astotherm Manual using APA format.

Signature Manifest

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ABMT-COLL-016 Astotherm Plus Operation

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