

CELL SAVER QUALITY CONTROL PROCEDURE

PRINCIPLE

Quarterly, a random specimen of washed red cells will be collected from both the reservoir and reinfusion bags of each cell saver machine. This sample will be tested for plasma hemoglobin, hematocrit, fragmented cells and albumin removal (processing efficiency). Also, each machine will be checked for sterility by testing the flush fluid before the procedure begins. Since the surgical field is inherently contaminated with normal skin and body flora, culture of the salvaged blood will not be done.

SPECIMEN

Each quarter the blood bank will deliver to the O.R. a bag containing 2 purple top tubes, 2 green top tubes, and an aerobic blood culture bottle for each cell saver, properly labeled, along with a Cell Saver Quarterly Quality Control sheet.

The perfusionist will fill out the top part of the QC sheet, fill the tubes appropriately, and return the specimens to the Blood Bank. One set of tubes is drawn on the blood in the reservoir before the washing procedure and one set is drawn on the blood in the reinfusion bag.

REAGENTS, EQUIPMENT and QUALITY CONTROL

Maintained by the departments that run the tests

PROCEDURE

Upon receipt, the Blood Bank technologist will distribute the tubes as follows:

1. The purple top tubes will be given to Hematology where a spun hematocrit will be done. A slide for fragmented red cells will be done on the reinfusion sample. Expect same day results.
2. The green top tubes will be kept in Blood Bank where semi-quantitative plasma hemoglobin will be done. Then these tubes will be taken to Chemistry where albumins will be run.
3. The blood culture bottle will be given to Microbiology for a sterility check. Negative blood cultures take seven days for final results.

CALCULATIONS

Calculations for the processing efficiency will be done by inserting the lab test results in an Excel spreadsheet labeled "Cell Saver QC Log Sheet".

EXPECTED VALUES

Blood culture	no growth
Plasma Hemoglobin	decrease to <400 mg/dl
Hematocrit	50-60%
Fragmented cells	1 per hpf
Processing efficiency	>90%

VA Medical Center, Columbia, MO

RECORDS / FORMS / DOCUMENTS

Cell Saver Quarterly Quality Control Sheet
Excel spreadsheet "Cell Saver QC Log Sheet"

INTERPRETATION / RESULT REPORTING

The Blood Bank Supervisor will collect results of all tests. Upon completion, the supervisor will initial the QC sheet and, if appropriate, add comments. The QC sheet will then be sent to the Pathologist for review, comments and signature. Results falling outside the expected range will be reviewed by the Blood Bank Director and by the hospital Blood Usage Review Committee. The Blood Bank Supervisor will instigate this review. Appropriate steps will be taken to investigate and correct any problems.

PROCEDURAL NOTES / LIMITATIONS

It has been decided that the semi-quantitative plasma hemoglobin along with processing efficiency calculated using albumin results will provide adequate indications of cell saver functions.

REFERENCES

American Association of Blood Banks Standards for Perioperative Autologous Blood Collection

COBE BRAT 2 Operator's Manual

month: _____
year: _____

CELL SAVER QUARTERLY QUALITY CONTROL SHEET

Date/Time Specimen collected _____
Machine Control # _____
Operator _____
Patient name/ID# _____
Surgical Procedure _____

(Please collect 1 each from both reservoir and reinfusion bags: purple top, green top – approximately 10cc of blood. Mix bags well before sampling and avoid hemolysis with transfer of blood to tubes.)

Reservoir specimen:	Reinfusion specimen:	Acceptable range:
Volume: _____	Volume: _____	
Plasma Hemoglobin: _____	Plasma Hemoglobin: _____	decrease to < 400g/dl
Albumin (g/dl): _____	Albumin (g/dl): _____	< 1.5 g/dl
Spun Hematocrit: _____	Spun Hematocrit: _____	50-60%
	Fragmented Cells: _____	1 per hpf
	Processing Efficiency: _____	> 90%

Sterility Culture Specimen:

(Please collect aerobic blood culture bottle by aseptic technique with 8-10 ml **flush fluid**.)

Culture results: _____ Acceptable limits: no growth

Blood Bank Review by: _____

Comments/Corrective Action:

Pathologist Review by: _____

(Submitted to CBBSweb, Sept. 19, 2004)