CORD CELL COLLECTION IN THEATRE

AUTOLOGOUS UMBILICAL CORD BLOOD AND TISSUE COLLECTION IN THEATRE (CELLCARE)

AIM

- To ensure theatre personnel have appropriate guidelines for autologous Umbilical Cord Blood and Tissue collection.

KEY POINTS

1. The Surgeon shall be responsible for the autologous cord blood and tissue collection.
2. Obstetric procedures take precedence over cord blood and tissue collection. Collection shall be deferred or not performed due to medical requirements.
3. Cell Care will provide documentation to notify the hospital and obstetrician that a collection will be occurring on the patient.
4. Cell Care will provide a verification form for each of their Collectors prior to a Collector/representative entering the hospital to complete any collection. These will be kept in the Hospital Clinical Managers (HCM) office for reference if required.
5. The Cell Care representative must adhere to theatre attire policy and have their identification and department visitor identification badge visual at all times.
6. Cell Care representatives will report to the HCM office to sign in and collect their Visitor’s Badge. In circumstances of an emergency caesarean the Collector will report direct to theatre and theatre administrative staff will advise the HCM of the arrival of the Collector and arrange for a Visitor’s badge to be delivered to theatre. The Cell Care Collector will sign the Theatre sign-in book on arrival to theatre in all instances.
7. The Cell Care representative is not to “scrub-in” and must take direction from the theatre staff.
8. The Cell Care representative (if present) is responsible for the Umbilical Cord Blood and Tissue once collected from the sterile field.
9. The manufacturer’s instructions for cord cell collection must be followed.
10. A sample of maternal blood is required for testing for infectious diseases for all patients having a cord blood and or cord tissue collection. Ideally, these are taken at the time the IV cannula is being inserted prior to the operation commencing. The tubes for collection are contained in the collection kit and must be labelled with the bar code labels provided and placed in the kit when obtained.

11. The inner wrap of the collection pack is sterile to enable the bag to be introduced to the sterile field for in-utero collection at caesarean section.

12. Cell Care provide colour-plate instruction guidelines for collection in each kit and these are a handy reference to be used in conjunction with these clinical guidelines.

13. The twenty-four hour 0424 179 749 number is available to contact the Cell Care On-Call Coordinator if there are any discrepancies or queries with any aspect of Umbilical Cord Blood or Tissue collection.

2. PROCEDURE

1. Open the outer wrapper of the collection kit for scrub nurse to take inner bag. The scrub nurse should carefully remove the pack from the inner bag, ensuring the small outer bag covering the three collection packs remains in situ and then straighten the tubing, checking for any obvious kinks.

2. When the baby has been delivered, the cord is clamped immediately, as close to the baby as possible, and the cord is cut as normal. Care is taken to avoid placing any additional clamps on the cord.

3. If additional bloods are required, (e.g. cord gases, lactates or Rh-ve) then a second clamp is placed approx. 5cms above the clamp at the distal end of the placenta. This clamp is left insitu until after completion of the cord blood collection to facilitate the collection of these additional required bloods by the midwife receiving the baby. Ideally collection of these additional bloods will wait until after completion of the Cord Blood Stem Cell Collection.

4. Administration of an oxytocic is given according to routine procedure and does not affect the cord blood collection.

5. As soon as baby is separated from the umbilical cord, swab the distal end of the cord with a sterile Raytec swab to identify the site for venepuncture.
   a. The Surgeon then takes one of the needled syringes from the collection set, removes the needle sheath and using a shallow puncture, bevel
up, gently inserts the needle into the umbilical vein.

b. All bags are to remain enclosed in the thin plastic pouch. The collection bags (still contained within the small outer plastic pouch) should then be given to the Cell Care representative/or theatre scout who will place the collection bags on a clean blue sheet on the floor to facilitate the flow of blood by gravity. The Cell Care Representative will indicate to the surgeon when the blood has stopped flowing. This is to help maximise the volume of blood collected.

c. Once the umbilical cord vein has collapsed AND the Cell Care representative has advised blood flow into the collection bags has ceased, before removing the needle, a second clamp is placed on the umbilical cord above the venepuncture site.

d. The blue clamp on the line is closed, the red toggle (secuvam cover) is clicked securely in place over the used needle and the second needle (If required) may now be used repeating the directions in points 5a - 5d

e. If the vein has failed to completely drain due to a clot or restriction in the cord, a second venepuncture is attempted higher on the cord using the second needle on the collection system.

6. If the collection of cord blood is successfully completed using only one needle
   the surgeon clamps and remove the needle and ensures the red toggle (secuvam cover) is clicked securely in place on any of the needles that have been used. DO NOT secure the secuvam cover on the second needle if this has not been used as the Cell Care representative will use this to attempt a second ex-utero puncture once the placenta is handed over.

7. Ensure the blue clamp is closed below the needle guards on any of the needle lines that have been used for the collection. The cord blood lines are then “thrown down” from the sterile field and the circulating nurse or (if present) Cell Care representative take the collection bag and complete the remaining procedures.

8. If a Cell Care Representative is present the surgeon then continues to remove the placenta as normal, taking care to be as gentle as possible with delivery (and not place a clamp at the placental junction) to prevent damage to the
cord and ensure a secondary ex-utero collection can occur if the second needle has not been used.

3. POST COLLECTION PROCEDURE (IF CELLCARE REPRESENTATIVE IS NOT PRESENT IN THE OPERATING THEATRE):
   1. Following completion of the Cord Blood Collection the Circulating Nurse ensures both secumvac covers are securely locked in place and both blue clamps immediately below these covers are closed and breaks the seal on small bag of anticoagulant (situated close to the Y junction below the needles) and roll ups up the small pouch so that the anticoagulant flows down the tubing into the bag, flushing any remaining blood from the line.
   2. Seal the line with the tube clamp, hold the clamp firmly closed and “milk” the tube towards the collection bags so that all the anticoagulant flows into the collection bag.
   3. Seal the clamp at the top of the blood pack.
   4. Move the blood pack in a swirling motion to ensure the anticoagulant is mixed well with the blood.
   5. Label the Cord blood collection bag with patient’s ID sticker. Place a label directly on the white label on the collection bag AND NOT on the plastic wrap that covers cord blood collection bag

CORD TISSUE COLLECTION (IF REQUIRED)
   1. Obtain the delivered placenta in a hospital dish.
   2. The Yellow Top Specimen jar is sterile and able to be opened onto the sterile field.
   3. Place the plastic cord clamp provided onto the cord.
   4. Using sterile scissors cut a 10 cm length of cord (wherever possible, avoiding areas of the cord that have been punctured or damaged by clamps)
   5. Clean the scissors with sterile gauze
   6. Using the cord clamp hold the length of cord up over the dish
   7. Wipe excess blood away firmly with sterile gauze (squeezing to remove the excess blood as you wipe down the length of the cord)
8. Using an aseptic technique thoroughly clean the cord with a sterile alcohol swab
9. Allow 30 seconds contact time after cleaning with the alcohol swab and then repeat cleaning of the cord with the second alcohol swab. Again allow 30 seconds drying time after completion of the cleaning.
10. Then wash the cord with 30mls of sterile saline
11. Remove the lid from the yellow-top sterile specimen jar and ensuring you do not touch the inside of the container with anything other than the cleaned cord tissue use the length of the jar (10cm) as a guide to cut the cord level with top of the container and allow the specimen to fall into the container, (Do not add the saline or the cord clamp into the container)
12. Screw the yellow lid securely onto the specimen container/ Place the completed cord tissue collection label lengthwise on the container, taking care not to cover the barcode label already applied to the jar).
13. Place the container into the zip lock bag provided with the small silica gel pad.

5. PACKAGING
If the Cell Care Representative is not in theatre the Cell Care Kit requires packaging for transport. A diagram with packaging instructions is contained on the underside of the inner white flap of every collection Cell Care Collection Kit. Instructions are as follows.

1. Ensure all three clamps on the blood bag tubing are securely sealed and that the blood bag is clearly labelled
2. Wrap the collection tubing around the blood bag (still contained within small plastic pouch) so that the collection bag will fit between the two temperature stabilising bricks provided.
3. Place a Silica Gel pad on top of one stabiliser brick and place the blood bag on top of this
4. Place a second gel pad on top of the blood bag and place the second stabilising brick on top
5. Place the two bricks containing the blood bag inside the zip-lock bag. Squeeze the air out of the bag and seal.
6. Place the packaged cord blood into the shipping container
7. Place the maternal blood tubes together with the Silica Gel pad into the second smaller zip-lock bag and seal.

8. Place the bag containing the maternal blood tubes on top of the bricks, already in the shipping container.

9. If relevant, place the zip-lock bag containing the cord tissue transport container and silica-gel pad beside the bag containing the maternal blood tubes.

10. Replace the foam insert and lay the document on top of the foam.

11. Close the white flap and place the lid on the top of the kit and seal the box lid to the shipping container with the two tamper evident seals.

6. TRANSPORT OF COLLECTION KIT TO CELL CARE

The parents (or if present) Cell Care Representative are responsible for calling Cell Care within two hours of the birth to arrange (Phone 1800 071 075) collection of the kit. A courier will attend during daylight hours. Whilst awaiting pick up of the kit, the collection box stays sealed with the mother in her room and be kept at room temperature (i.e not refrigerated).

REFERENCES / STANDARDS

National Standards – 1- Care Provided by the Clinical Workforce is Guided by Current Best Practice; 3- Preventing and Controlling Healthcare Associated Infections; 5- Patient Identification and Procedure Matching; 6- Clinical Handover; 7- Blood and Blood Products

Legislation - Related Policies -

Other related documents – KEMH Clinical Guidelines:
- Perioperative Services: Cord Cell Collection in Theatre

RESPONSIBILITY

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