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Swansea Bay University
Health Board

Guidance on Umbilical Cord Blood Banking

Speciality: Maternity

Approval body: Labour Ward Forum

Approval date: 15th November 2018

Date of Review: April 2027

Agreed extension by the Clinical Guideline Group August 2024

Guideline on Umbilical Cord Blood Collection for Stem Cell

Rationale

The request for parents to allow the procurement of cord blood samples during the birth of a baby is becoming much more common due to the publicity around scientific advances and the use of stem cells.

Definition of a Stem cell

Stem cells are cells from which other types of cells can develop. Blood stem cells perform the function of replenishing the supply of the red blood cells, white blood cells and platelets.

- Stem cells are capable of self division and self renewal over a long period of time
- Stem cells are unspecialised – they lack tissue specific functions and structures.
- Stem cells give rise to specialised cells – differentiation

Most of the stem cells are found in the bone marrow, peripheral blood and also the placenta/umbilical cord.

The procedure for collecting stem cells requires the blood to be taken from the placenta or umbilical cord immediately after the birth and then banked for future use. The umbilical blood is rich in stem cells that are capable of adapting in the body and replacing damaged or diseased cells. Stem cells taken from the cord blood at birth have a much higher chance of being supported by the body than healthy cells imported from a donor.

Use of Stem cells

- Stem cells have been used for the treatment of leukaemia, lymphoma and multiple myeloma
- Medical advances to cure other cancers, heart disease, spinal cord injuries, Parkinson's disease and Alzheimer's

Types of Cord Blood Collection

Non directed voluntary donations

For those with no suitable family member, cord blood banks have been set up along similar lines to registries of bone marrow donors, only certain hospitals have been identified for banking in the UK.

Directed donations in at risk families

Some transplant centres currently recommend cord blood collection and storage for siblings born into a family where there is a known genetic disorder, which may be treated by stem cell transplantation.

The clinician caring normally initiates such donations for the sick potential recipient, making appropriate arrangements with the National Blood Service Cord Blood Bank.

Directed donations in low risk families

At present it is difficult to estimate the likelihood that a directed donation from a low-risk family would be used and more research is needed including clinical trials before the potential use of umbilical cord stem cells can be realistically estimated.

Commercial umbilical cord blood collection is increasingly being advertised to families as an insurance against any future health problems their children may develop or storing a spare immune system for their children.

This service is currently being marketed in the UK for a cost of up to £1000 – storage for 20 years.

Problems associated with the collection of cord blood;

- There are a number of practical issues, which give cause for concern when a request for personal umbilical cord blood storage is made.
- Consent procedure and associated paper work is time consuming for midwifery staff.
- The collection procedure requires the cord blood to be taken shortly after the birth of the baby – when other aspects of care may require attention. The requirement to obtain a large volume of cord blood to ensure successful transplanting can be distracting when the midwife is responsible for the mother and newborn infant.
- There is a risk of contamination during the procedure.
- Risk of incorrect labelling – identification of sample.
- Parents also need to be aware of the potential risk of the sample going missing etc in the transportation process.
- Other specific issues requiring consideration/attention include:
 - Prematurity – early cord clamping is disadvantageous to babies
 - Nuchal cord – cord around the baby's neck may require the cord to be cut prior to birth – practitioners should not be pressured to avoid cutting the cord.
 - Multiple pregnancy – the logistical burden of collection increases at multiple births.

Recommendations

- Collection of cord blood when medically indicated for at risk families is an acceptable procedure. Counselling and collection arrangements should be made through the National Blood Service, who will also arrange staff training in sample collection.
- Collection in ABMU Health Board must be undertaken by a trained third party – this person can be organised by the family or via the commercial company. Health Board staff will not be undertaking this collection.
- For those women wishing to make voluntary donations, they must be advised to contact the NHS Cord Blood Bank who will advise them of the specific hospitals where this is undertaken.
- If women want this service and are not willing/able to pay for a third party person, they should be advised to contact other local units who may provide this service. It is not the responsibility of the midwifery team to locate other units for the women.
- Any advice/discussion regarding this request must be documented in the maternal notes.
- For directed donations where transplant centres have recommended cord blood collection and storage from siblings born into a family where there is a known genetic disease amenable to HSC transplantation should be transferred to a maternity services local to the centre where arrangements are already in place for collection.

Health Board's position on Collection of cord blood

With the above recommendations in mind the Health Board will only support women who wish to have their cord blood collected for stem cells if a trained third person undertakes this procedure.

All staff should be conversant with these guidelines so a woman or her family requesting cord blood collection can be informed of the Health Board's position.

The organisation employing the third person needs to communicate with the midwifery management and provide evidence that the third person has undergone the appropriate checks such as criminal records bureau (CRB) and been trained to take the cord blood. The organisation needs to provide details of the third person's indemnity insurance for them to be able to practice on Health Board premises.

A detailed management plan should be written with the woman during the antenatal period and placed in her maternity notes. Reference to the plan should be documented in the All Wales Maternity Records, Intrapartum Plan of Care section.

Maternity Services

Checklist for Clinical Guidelines being Submitted for Approval

Title of Guideline:	Guidance on Umbilical Cord Blood Banking
Name(s) of Author:	EMS Davies, Consultant Midwife
Chair of Group or Committee approving submission:	Labour Ward Forum
Brief outline giving reasons for document being submitted for ratification	Update existing policy
Details of persons included in consultation process:	Labour Ward Forum
Name of Pharmacist (mandatory if drugs involved):	n/a
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Please indicate key words you wish to be linked to document	Umbilical, cord, banking, cell,
File Name: Used to locate where file is stores on hard drive	