

Transfer of infants referred for total body hypothermia – practical aspects

In order to achieve the onset of cooling within 6 hours, infants must be referred at a very early stage, preferably within the first hour of life. In order to achieve this a prompt decision, early departure of the team and rapid stabilisation and transfer must be undertaken. In certain circumstances traffic conditions and the overall stability of the patient may affect the feasibility of achieving this and should be included in the decision making. Infants at geographically remote units more than 1 hour of estimated travelling from St Marys will not be considered for Hypothermia.

As these transfers will be an example of a time critical transfer it may not be possible to take as comprehensive pre-transfer details or the same duration of pre-transport stabilisation as normal. If it becomes clear that the condition of the infant is poor and could be significantly compromised by a rapid transfer, then the team should discuss with the transport consultant the appropriateness of continuing with the transfer.

For daytime referrals within Lancashire and South Cumbria it may be possible to utilise the STARS team, however the initial referral should be made to the Cot bureau, who will decide on which transport team will collect in conjunction with the Transport or NNMU consultant.

Referral

If an infant is referred for cooling

- Section 1 and 2 of the checklist should be completed by the cot bureau staff immediately.
- Sections 3 and 4 should be completed by a member of the nursing, ANNP or medical team at the earliest opportunity.
- The accepting consultant Neonatologist should be notified immediately and will make the final decision.

If there is strong evidence of Perinatal asphyxia (section 3) but the features of encephalopathy (section 4) are indeterminate or have not evolved at the time of referral, then it may be appropriate to undertake an aEEG recording at the local unit with the transport team taking the CFM monitor in the transport car. This will only be possible where there is an ANNP, SPR or consultant available for the transfer who is trained to undertake and interpret the recording. If this is not possible then the infant may not be eligible for hypothermia and the Consultant should discuss with the referring unit if they wish to continue with the transfer.

An aEEG recording will not be undertaken routinely at the local unit as this may compromise the ability to commence cooling within 6 hours. If time allows, it is optimal to do this recording at an early stage when the infant arrives at St Marys before being placed on the cooling mattress.

Dispatch

- The transport team should undertake brief clinical details focussing on the cardiorespiratory and CNS systems
- The referring hospital should be advised to avoid hyperthermia, ideally maintaining the body temperature at around 36 centigrade. This may require turning off the incubator and keeping the baby unclothed.
- The referring unit should inform the parents about the need for a prompt transfer for cooling (parental assent) and provide the parent information leaflet about hypothermia. Formal written consent is not required.
- If possible, 2 members of the nursing team should accompany an ANNP or Doctor to reduce the turn around time at the referring unit.

- The team should depart as soon as possible either using the transport car or emergency ambulance with blue lights depending on distance and traffic conditions.
- The transport team should ensure that an intensive care space is prepared by NNMU staff with the cooling mattress ready to be used.
- The CFM monitor should be taken if the clinical criteria in section 4 are indeterminate and appropriate staff are available
- The rectal temperature probe is kept on the top shelf of the transport equipment cupboard
- The transport incubator heater should be turned off on the outward journey

On arrival at the referring hospital

- Obtain a full handover and undertake a comprehensive assessment and examination, including CNS.
- Verify the clinical criteria for hypothermia treatment or undertake an aEEG recording if appropriate
- If the infant is eligible for hypothermia, turn off the incubator and monitor the rectal temperature using the probe.
- Undertake the normal processes for stabilisation including the use of anticonvulsants where appropriate
- Aim to complete the stabilisation within 90 minutes of arrival, with the infant placed in the transport incubator.
- If the infant is very unstable and rapid stabilisation and transfer would seriously compromise the safety, discuss with the referring and transport consultants
- If the infant is moribund or dying it is inappropriate to continue with the transfer - care should be handed back to the local staff after discussion with the transport consultant
- Unfortunately the time of departure must not be delayed by the need for parents to visit or have extensive discussion with the transport team – these issues should be resolved prior to arrival of the team
- If the baby is not ready for transfer by 5 hours of age, reconsider the appropriateness of transfer for hypothermia

On Departure from the referring unit

- Proceed immediately to the ambulance – do not attend the maternity ward or delivery suite
- Keep the transport incubator heater turned off, baby unclothed and the ambient ambulance temperature low to maintain a rectal temperature ideally between 35 and 36 centigrade
- Check that the intensive care space is fully prepared and cooling mattress ready for use (pre-cooled to 20 centigrade) and incubator heater turned off
- Request return transfer by blue lights depending on time, distance and traffic conditions.

On arrival at NNMU, St Mary's Hospital

- If the infant is **more than 5 hours of age on arrival**, place the pre-cooled mattress into the incubator and immediately transfer the patient out of the transport incubator. Complete the TOBY register datasheet.
- If the infant is **less than 5 hours of age on arrival** and hasn't had an aEEG recording, immediately transfer the patient out of the transport incubator and undertake a 30 minute aEEG recording before cooling (providing appropriate staff available). Complete the TOBY register datasheet.
- Post transfer observations will be undertaken with the child inside the units incubator
- If the arrival is unexpectedly delayed to more than 6 hours of age, discuss with the consultant if cooling is still appropriate.
- Aim to cool to a rectal temperature of 33.5 centigrade, using the guidelines for implementation of hypothermia.