A foster carers' training package for home treatment of neonatal abstinence syndrome: facilitating early discharge

Neonatal abstinence syndrome (NAS) is a constellation of symptoms seen in newborn infants exposed to opioid during pregnancy. The sudden cessation of supply at birth leads to a variety of symptoms that can be unpleasant for the infant and difficult to treat. There is evidence to support the use of pharmacological agents in treating NAS; however, non-pharmacological supportive care is equally important. A hospital may not be the most appropriate environment for care: facilitating the discharge of these infants to the home environment will benefit them and the service.

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Key points

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1. Good quality supportive care for infants with NAS is as important as pharmacological treatment.
2. The noisy, bright environment of a neonatal unit, transitional care unit or postnatal ward may not be appropriate for delivering non-pharmacological supportive care.
3. Foster carers can be trained to manage infants with NAS at home, where the environment is likely to be more suitable.

This article forms the second in a series highlighting the problems and challenges associated with managing infants at risk of neonatal abstinence syndrome (NAS). A summary of the scale of the problem in Leeds and its associated challenges is given in the first article.[1]

Neonatal abstinence syndrome (NAS) results in unpleasant symptoms in multiple systems, characterised particularly by neurological irritability. Eighty per cent of infants exposed to opioid during pregnancy will develop NAS,[2] many will require pharmacological treatment and a period of admission to the neonatal service. Oral morphine is the treatment of choice for infants where pharmacological treatment is necessary.[3-5]

In addition to opiate treatment, non-pharmacological supportive care of these infants is vital. An American Academy of Paediatrics report published in 2012 highlights the need for non-pharmacological supportive measures; simple techniques such as nursing in a quiet room with dim lighting may offer significant benefit.[3-6]

FIGURE 1 highlights some of the dysregulation seen in infants with NAS and demonstrates clearly why good supportive care is vital. Admitting mother and baby (or baby alone) to the neonatal unit may be detrimental to the infant because of the loud and busy nature of such an environment. It is logical to hypothesise that non-pharmacological supportive care for NAS is likely to be more effectively delivered in the home environment.

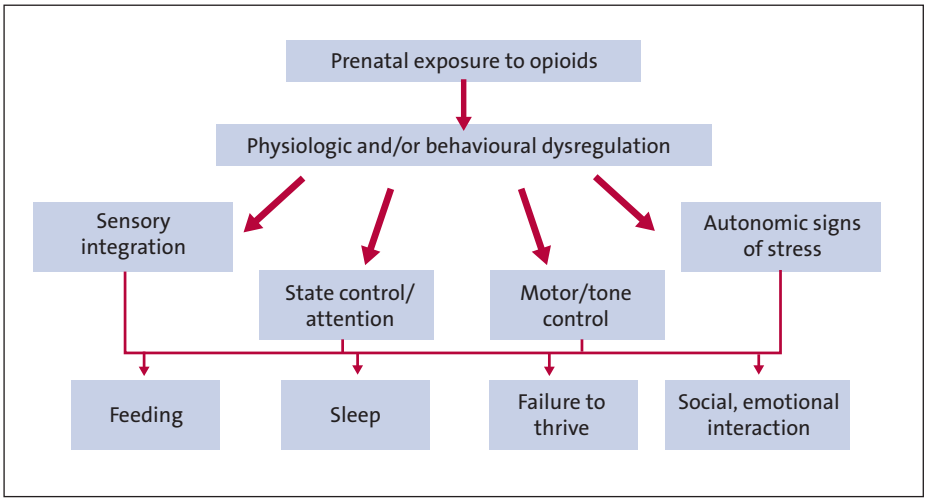

FIGURE 1 Dysregulation in infants with NAS, adapted from Velez et al.[6]

The local situation: Leeds, West Yorkshire

The data for women presenting to the Leeds Addiction Unit (LAU) multidisciplinary antenatal clinic was retrospectively reviewed. Infants born to these women and admitted to the service for observation or treatment of NAS between July 2010 and July 2012 were included. Infants <35 weeks gestational age, <2.5kg or with significant additional diagnoses were excluded from the study. It was found that:

- In the two-year period, 126 infants were admitted, staying for a total of 1,492 days
- The mean stay was 11.8 days
- Infants at risk of, or with, NAS occupied two cots per day within the neonatal service
- Of the 126 infants, 26 (21%) were discharged to foster care.

Facilitating the discharge of infants with NAS to the home environment will be beneficial to both the infant and the service – more cots will be available for other admissions where hospital care is a necessity.

The need for a training package

The team hypothesised that infants discharged to foster care may have the most severe NAS as a result of maternal drug use and chaotic lifestyle. In order to test this theory, those infants born between July 2010 and July 2012 were analysed in two groups: those who subsequently went home and those who received foster care.

For infants with NAS who were discharged to the home, the mean length of hospital stay was 9.6 days.

For infants with NAS discharged to foster care, the mean length of hospital stay was 17.5 days.

According to the existing, locally created guideline, an infant can be discharged to foster care if a trained carer is available 'once the infant has tolerated its first reduction of treatment and has been stable for 48 hours'. Using this criterion, it was possible to predict that the length of stay for infants going to foster care could be reduced to a mean hospital stay of 7.9 days when a trained carer is available.

Those infants that would go on to receive foster care could expect a longer hospital stay and therefore might potentially benefit most from treatment in the home environment and maximising the opportunity for good quality, non-pharmacological care. Discharging such infants on treatment, following a period of stability in hospital, would then free up a significant number of neonatal cot days: combining inpatient and outpatient treatment has been shown to decrease hospital stay and reduce costs.[7]

Date										
Time										
Not settling after feed										
Tremors										
Stiffness										
Jerks										
High pitched cry										
Irritable										
Sneezing										
Vomiting										
Loose stool										
Sore bottom										
Total										

- Place a ✓ if present or a ✗ if absent, add up the ✓, maximum score will be 10.
- Score the baby several times per day after a feed, the score should reflect events in the hours preceding the score rather than just the single moment in time.
- Use the scores as a guide when discussing with the LAU midwives whether the baby's medication is ready to be reduced.

FIGURE 2 A simplified score chart for use by the foster carer.

Caring for babies with neonatal abstinence syndrome in the home environment

An introduction for foster carers

1. Introduction
2. Foster carers' experiences – DVD
3. Assessing the NAS infant
4. Scoring
5. A recent case
6. Discharge planning
7. Questions/discussion

FIGURE 3 Training for caring for infants with NAS, session one: the problem and how to manage it.

The Leeds foster care training package

At Leeds, a training programme for foster carers was devised to facilitate the safe discharge of infants to the home environment on treatment, aiming to reduce their length of stay in hospital. During previous discussions at the multidisciplinary Substance Misuse in Pregnancy (SMiP) Group, it was decided the appropriate time for discharge of these infants would be when the infant has tolerated its first reduction of treatment and has been stable for 48 hours.

The aim of the training package was to equip foster carers with the knowledge and skills to safely and effectively care for infants with NAS in the home environment. The foster carer would then be supported following discharge by the LAU midwifery team. The carer is supplied with a simplified score chart to record events – this facilitates discussion with the LAU and permits assessment of the infant's progress and adjustment of medication (**FIGURE 2**). Any infant discharged to foster care on treatment will go home with an apnoea alarm.

Leeds is fortunate to have a regular forum every second month for foster carers interested in the welfare of infants with NAS. This well-established group meets at one of the local children's centres where a crèche for the infants is provided, allowing the foster carers to focus on the group meeting. Training was delivered in two sessions to this group: the first session included an introduction to the problem and how to manage it (**FIGURE 3**), the second session a practical skills workshop (**FIGURE 4**). Attendance at both sessions was mandatory in order to be 'signed off' as competent to care for infants with NAS at home. The training was delivered by the LAU midwifery team, the author and a specialised health visitor. In total, 12 foster carers attended both sessions and are now deemed competent to care for such infants at home.

The Leeds Teaching Hospitals NHS
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Foster carers' clinical skills training

Name ..... Date .....

Clinical skill	Competent (yes/no)
1. *Understanding neonatal abstinence syndrome (NAS)* • Watch presentation. • Describe signs and symptoms of NAS. • Describe basic management for NAS including use of score chart.	
2. *Medicine administration* • Demonstrate preparation of medicine. • Demonstrate administration of medicine. • Describe safe storage of medicine. • Understand side effects of medicine.	
3. *Basic life support and apnoea monitor* • Watch DVD. • Practical assessment with basic life support manikin. • Understand clinical use of apnoea monitor for NAS babies. • Practical assessment with apnoea monitor.	

Signature of assessor ..... Date .....

FIGURE 4 Training for caring for infants with NAS, session two: practical skills workshop.

The future

Despite this advancement in care for these vulnerable infants, NAS will continue to be a significant problem for the neonatal service in Leeds in terms of medical management of the condition and the demand it places on neonatal cots. In order to further improve the situation for all infants at risk of NAS the service will need to continue to improve and evolve. The areas in which practice is actively being reviewed in order to optimise outcomes include:

Changes in opioid prescription during pregnancy

Some practitioners advocate opioid dose reduction or detoxification during pregnancy. The main aim of methadone maintenance, however, is a reduction in risk taking and criminal behaviour,[8] rather than avoidance of NAS, although lifestyle stability could be jeopardised by dose reduction or detoxification.

Rather than complete opioid detoxification, the use of buprenorphine during pregnancy is well described. NAS as a result of exposure to buprenorphine can be less severe than that seen following methadone exposure.[9]

Optimising the treatment of NAS

As discussed previously, evidence from literature consistently shows an opiate as the treatment of choice for infants where pharmacological treatment is necessary. Although recently, there has been increasing interest and evidence to support the use of clonidine for the treatment of NAS.[10,11] Further work is needed to explore this treatment option.

Breastfeeding in NAS

The potential benefits on severity of NAS as a result of breastfeeding have been discussed in the previous article in this series.[1] There are definite benefits of breastfeeding in mitigating the severity of NAS yet breastfeeding rates in drug-dependent women are extremely low. There are significant challenges to promotion of breastfeeding in this group, however through staff education and provision of supportive information to drug-dependent women, it may be expected that rates can improve.

Finally, it is important to build on the current expertise of discharging infants to foster care on treatment and explore the option of sending appropriate infants home to their parent(s).

Acknowledgement

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