Neonatal Abstinence Syndrome Management

Stacey Jones, MSN, APRN, NNP-BC
Wesley Medical Center, Wichita KS
Background Information

2012-2013:
• Dr. Laudert introduced the Finnegan Scoring manual and videos to Newborn Nursery nurses that was a part of an iNICQ VON collaborative.

December 2016:
• Created a core nursing group of nurses that were interested in being primary nurses for patients with NAS.
• Gave additional education per written and on line classes to a core group of approximately 20 nurses.

January 2018:
• Collaborated with KU Newborn Services and created current protocol and treatment plans for all infants with NAS that were admitted to Wesley Medical Center.

August 2018:
• Implemented Eat, Sleep and Console.
• Implemented current protocol and treatment plan.
Scoring Criteria

- Any infant that has had a known exposure in utero
- Any infant born to a mother with limited or no prenatal care
- Any infant that presents signs of withdraw

Non-Pharmacologic Interventions
- Dark quiet room
- Kangaroo care
- Score in the calmest state
- If formula is used should be 22 kcal/oz
- Breastmilk unless contraindicated

- Hand containment/Firm holding
- Quiet humming
- Minimize stimulation/cluster care
- On demand feeds
Eat, Sleep and Console Approach

- Gestational Age greater than 35 weeks
- Oral feedings ≥ 1 ounce or breastfeeding ≥ 5 minutes per feeding
- If requiring IVF: Oral feedings ≥ 75 ml/kg/d
- No other medical issues
- Bed placement in a single family room
Eat, Sleep and Console Approach

Can infant eat ≥ 1 ounce per feeding or breastfeed well OR
If on IVF orally feed 75 ml/kg/day

Can infant sleep ≥ 1 hour undisturbed?

Can infant be consoled within 10 minutes?

Infant is considered to be well managed and no further interventions are necessary

STEP 1
Non-pharmacologic interventions increased if possible
- Feeding on demand
- Swaddling and holding
- Low-stimulation environment
- Parental presence

STEP 2
Start Morphine at 0.05 mg/kg orally every 3 hours OR
Give one time dose of 0.05 mg/kg and reassess in 3 hours OR
Increase scheduled dosing by 0.01 mg/kg per dose ORALLY until a maximum dose of 0.2 mg/kg/dose

NO IMPROVEMENT
Eat, Sleep and Console Approach

**Escalation**

Should an infant not meet all of the requirements of ESC and reaches the maximum dose of Morphine 0.2 mg/kg/dose, ESC will be discontinued.

Finnegan Scoring and treatment will begin per protocol.

**Weaning**

When an infant has met all 3 requirements for 24 hours without a change in dosing, begin weaning.

Wean by 0.04 mg per dose every 24 hours.

**Discharge**

Infants that do not require pharmacologic treatment may be discharged after being monitored for 72 hours.

Infants that required pharmacologic treatment may be discharged 48 hours after the last dose.
Finnegan Scoring Approach

- Any infant that is admitted in the NICU
- Any infant that does not meet all of the requirements of ESC
- Any infant that fails on ESC and is on Morphine 0.2 mg/kg/dose
Finnegan Abstinence Scoring System: Initiation

FNASS ≤ 8
- Continue non-pharmacologic interventions. Starting from first score, monitor for 72 hours
  - Last 2 scores are increasing
    - Hold discharge and continue Q 3 hours scoring
    - FNASS ≤ 8 and not increasing
      - Home with PCP follow up within the week
      - FNASS ≤ 8 and not increasing
  - FNASS ≤ 8 and not increasing
    - Continue non-pharmacologic intervention

FNASS ≥ 9
- Begin FNASS scoring and non-pharmacologic intervention
  - FNASS ≥ 9 X3 in a row OR ≥ 12 X 2 in a row
    - Initiate Morphine
      - Enteral: 0.05 mg/kg/dose Q 3 hours
      - IV: 0.02 mg/kg/dose Q 3 hours
    - FNASS ≥ 9
      - Continue scoring for 48 hours
      - No two consecutive FNASS ≥ 9
      - Go to weaning
    - FNASS ≤ 8
      - Continue scoring for 48 hours
      - No two consecutive FNASS ≥ 9
      - Go to weaning

FNASS ≤ 8 and not increasing
- Home with PCP follow up within the week

CONTINUE SCORING Q 3 HOURS
- If unable to wean after 2 weeks go to adjunct treatment
- Increase morphine Dose
  - ORAL: 0.04 mg/kg/Dose MAX 0.2 mg/kg/Dose
  - IV: 0.02 mg/kg/Dose MAX 0.1 mg/kg/Dose
Finnegan Abstinence Scoring System: Adjunct Treatment

Adjunct therapy is indicated when there is a third backslide after initiation of therapy, the morphine dose is at 0.2 mg/kg/dose or after 2 weeks with no progress.

Exposure to barbiturate and/or benzodiazepine?

Yes:
- Trial one time load of phenobarbital (20 mg/kg X1 or 10 mg/kg Q 3H X2). If scores remain ≥ 9 start maintenance dose of 2.5 mg /kg BID or add clonidine 2 mcg/kg PO Q 6 hours

No:
- Begin Clonidine 2 mcg/kg PO Q 6 hours
- Continue scoring Q 3 hours
- No two consecutive FNASS ≥ 9
  - Go to weaning
- Two consecutive FNASS ≥ 9
  - Has it been at least 24 hours since clonidine was added or dose increased?
    - No
      - Has patient received phenobarbital load?
        - No
          - Trial one time load of phenobarbital (20 mg/kg X1 or 10 mg/kg Q 3H X2)
        - Yes
          - Increase clonidine dose
          - Start phenobarbital maintenance dose 2.5 mg /kg BID or add clonidine 2 mcg/kg PO Q 6 hours
    - Yes
      - Increase clonidine dose
Finnegan Abstinence Scoring System: Weaning

48 hours of no change in dosage and no two consecutive FNASS ≥ 9

Wean morphine by 0.04 mg/dose every 24 hours
Continue non-pharmacologic interventions and scoring every 3 hours

No two consecutive FNASS ≥ 9

Go to backslide management

Two consecutive FNASS ≥ 9

Wean morphine by 0.04 mg/dose every 24 hours
Discontinue when dose is ≤ 0.02 mg/kg

Clonidine:
Decrease dose by 50% for 2 days then discontinue

Yes

Phenobarbital:
Change dose from every 12 hours to every 24 hours for 2 days then discontinue

No

Monitor for 48 hours then discharge home with PCP follow up with 2-3 days

Is patient on adjunct therapy?
Finnegan Abstinence Scoring System: Backslide Management

- Two consecutive FNASS $\geq 9$
  - First backslide?
    - NO
      - Go to adjunct therapy with third backslide
    - YES
      - Restart morphine at 0.02 mg/kg PO Q 3 hours
  - Second backslide?
    - NO
      - Increase dose to previous step at which patient was stable
    - YES
      - Was patient off morphine and now restarted?
        - NO
          - Go to weaning
        - YES
          - Continue morphine 0.02 mg/kg PO every 3 hours for 24 hours then change to 0.02 mg/kg PO Q 6 hours for 24 hours then discontinue

Ensure non-pharmacologic interventions are maximized
**Finnegan Abstinence Scoring System: Chronic Management**

*Use for patients > 21 days of age*

- **FNASS q 3-4 hours**
  - **Go to weaning** (NO)
  - **Two consecutive FNASS ≥ 11** (YES)
    - **Is patient on clonidine?** (NO)
      - **Start Clonidine 2 mcg/kg PO Q 6 hours**
    - **Has clonidine been increased in the past 24 hours?** (YES)
      - **Give one time load of phenobarbital (20 mg/kg X1 or 10 mg/kg Q 3H X2)**
    - **Has patient received phenobarbital load?** (NO)
      - **Increase clonidine dose**
      - **Start maintenance Phenobarbital 2.5 mg/kg BID**
  - **Has patient received lorazepam?** (NO)
    - **Has patient received 3 doses of lorazepam in a 24 hour period?** (NO)
      - **Give lorazepam 0.1 mg/kg PO X1**
    - **Start maintenance Phenobarbital 2.5 mg/kg BID**

**Clonidine Dosing**

If escalating dose, can increase dose or frequency. Maximum dose is 24 mcg/kg/DAY and no more than Q 3 hours.