

Benefits of Using an MRI Immobilizer for Infants in the NICU

Corrine Sawyer, MSN, RN, LSSGB • Sheimon Capiendo, BSN, RN • Michelle Jones, RN • Beth Frawley, RN

BACKGROUND

Magnetic Resonance Imaging (MRI) of the brain is a common diagnostic tool we use in the NICU. It allows for the visualization of internal structures and can aid in the diagnosis of intraventricular hemorrhage and other brain lesions. Achieving quality diagnostic images require a motionless patient. This is difficult to achieve without sedation in our neonatal population. However, the infant can have potential serious adverse reactions to sedation. It can typically result in episodes of apnea, bradycardia, or oxygen desaturation. The infants who received sedation often times need oxygen supplementation post-MRI. This occasionally would prolong the infant's stay in the hospital.

PURPOSE

The purpose is to prevent sedation administration when possible. The MRI-compatible pediatric immobilizer is an "airtight, chambered device that safely and securely fastens around the infant without applying pressure." It allows the infant to be swaddled and warm, sleepy and remains still, in order to complete an MRI without sedation. This will reduce medication exposure, procedure delays, recovery team, and healthcare costs.

METHODS

In our NICU, we started utilizing the "feed and immobilize" method instead of pharmacologically restraining our neonates before an MRI. Since we have been using this immobilizer for about 1.5 years, we have noticed that most of our babies do not require sedation for an MRI. The "feed and immobilize" method consists of:

- Ensuring the infant is fed well and has a clean diaper prior to MRI
- Position and secure the infant inside the immobilizer before getting to the MRI table.
- When in the MRI area, we use the wall suction to vacuum the cushion of the immobilizer, making it snug around the baby.
- Headphones are placed on infant for hearing protection
- Pacifier is given to infants who are starting to stir
- Closely monitor infant during the procedure

Majority of the infants stay asleep when placed into the immobilizer due to their full tummies and the comfort of being swaddled cozily.

PEDIATRIC MRI IMMOBILIZER STEPS



1. Wrap



2. Inflate and soothe



3.

MRI



4. Deflate

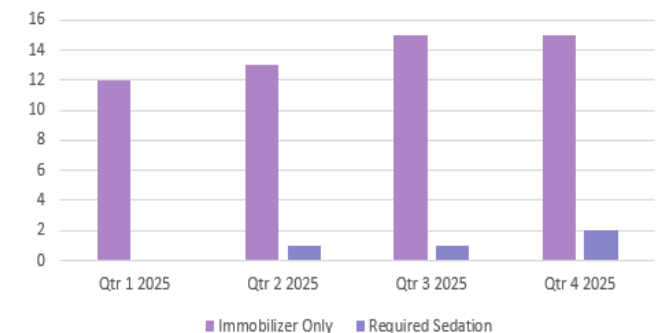
RESULTS

Our NICU has an average of 50 MRI brains annually. Before the pediatric immobilizer, every single infant required sedation before receiving an MRI. It was the only way for the infant to lie still during the procedure. Within the last 1.5 years of utilizing the immobilizer, we noticed a significant decrease in medication usage. Approximately less than 10% of the infants actually required sedation to receive an MRI with acceptable diagnostic quality.

CONCLUSIONS

Using a pediatric immobilizer may provide a safe, effective, and non-pharmacological alternative to sedation for infants who require an MRI. By promoting comfort and minimizing movement, the immobilizer can help support attaining successful diagnostic images while potentially reducing the risks, recovery time and resources associated with sedation. The "feed and immobilize" approach may also improve the workflow and enhance the overall MRI experience for infants, families, and healthcare providers.

Neonatal MRI Brain at UMC:
Immobilizer Use vs. Sedation



REFERENCES

For access to References,
please scan QR code:

