Transportle

Improving High-Risk Micro-Preemie Infant Transport Outcomes

Jeremy Goodman Ph.D.
Kristie Gagliano CCRN C-NPT

Introduction

The Transportle's innovative neuroprotective design and positioning accessories helps prevent brain injury and various other complications during transport of micro-preemie infants by reducing noxious environmental stimulation.

The Transportle Preemie-Pod enables the infant to nest into comfortable fetal flexion and provides the ability to hold the infant's head in a stable neutral position while allowing the transport teams to practice IVH protocols prior to arrival at the referral hospital NICU which has never been possible.

About 56,000 micro-preemies are born each year in the United States. Many require neonatal transportation to a tertiary care center for their ongoing management. Transports—whether by ambulance, helicopter or fixed wing aircraft present varying degrees of noise, vibration, intermittent shock and noxious stimulation—are known to increase the chance of sustaining an intraventricular hemorrhage (IVH) within the first three days of life.

Pilot Study Results

	GA # Wks	Age (hr/day)	Weight Kg	Resp Device Securement	Neutral/Stable Head	N/C in VS Stability	Vibration Decreased	Comfort Improved
Infant 1	24	5d	.67Kg	Vent/Stable	Yes	Y (BP +/- unrelated)	Yes	Yes
Infant 2	26	2d	.81Kg	NC/ Stable	Yes	Yes	Yes	Yes
Infant 3	23	2d	.55Kg	Vent/Stable	Yes	Y/Bradys unrelated	Yes	Yes
Infant 4	25		.845Kg	Vent/Stable	Yes	Yes	Yes	Yes
Infant 5	26	3hr	1.04Kg	Yes	Yes	Yes	Yes	Yes

Study Methods

5 infants less than or equal to 26 weeks of age and less than 1.05 Kgms were stabilized using the Transportle while in the out born hospital and continued use during transport in either an ambulance, helicopter or fixed wing aircraft. After arrival at Driscoll Children's Hospital NICU, the transport team used the Transportle to safely transfer the infant to the receiving bed to continue their NICU care. Infants were monitored for vital signs including: heart rate, respiratory rate, temperature, blood pressure and also for oxygen saturation.

Descriptive observations were made regarding the stability of respiratory devices as well as patient comfort and vibration and sound dampening throughout the transport using Transportle compared to the transport experience without Transportle.

Observed Benefits

- Safe transfer of infant to and from warmer to transport incubator keeping baby in comfortable fetal flexion *without* any additional handling
- Ability to practice IVH protocol prior to arrival at referral hospital
- Improved respiratory device stability
- Cold stress prevention
- Reduced vibration & sound
- Decreased infant startle from physical shocks
- Support rolls provide secure lateral and foot boundaries
- Positioning wedge
    - Neutralizes Trendelenburg Position during transfers
    - Helps maintain HOB at 15-30 degrees for IVH Protocol

Conclusion

Use of the Transportle is likely to help achieve more stable and safe transports for these fragile infants. It also allows for the initiation of best practice IVH protocols before and during transport which has never been possible in the past and which may reduce the incidence of IVH in those infants requiring a medical transport.