IMPLEMENTATION OF QUICK-WE TECHNIQUE FOR CLEAN CATCH URINE SAMPLING IN NEWBORNS

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Background Clean urine samples can be either collected invasively (catheterization and Suprapubic aspiration), or non-invasively using sterile bags, which are associated with discomfort and contamination.

A clean catch urine sample is the recommended method for urine collection in children who are able to cooperate. This is difficult in newborns who lack sphincter control. Stimulation techniques that facilitate emptying of the bladder could help with a clean-catch urine sample.

Objectives Determine success rate and safety to obtain clean-catch urine samples in newborns with Quick-Wee technique.

Methods

- This is a prospective study conducted in the Well Baby Nursery at KFAFH over 2 years (July 2014-September 2016).

- Inclusion criteria: Newborns aged under 30 days who needed a urine sample according to the attending physician.

- Exclusion criteria:
  - Poor feeding.
  - Dehydration.
  - Abnormal vital signs.
  - A medical condition that limits the maneuver manipulations.
  - Drug administration.

- Technique
  - Two nurses performing the technique and a third one monitoring the time with a stopwatch.
  - Full feed for age given, and 25 minutes later, genitals are cleaned with warm water and soap then dried with sterile gauze.
  - Nonnutritive sucking as nonpharmacological analgesia.
  - One nurse holds the newborn under the armpits with legs dangling, and the other nurse begins to stimulate the bladder by gently tapping the suprapubic area at a frequency of 100 taps or blows per minute for 30 seconds. Then stimulates the lumbar paravertebral zone in the lower back with a light circular massage for 30 seconds. This is repeated until micturition begins and a midstream urine sample is caught in a sterile container.
  - Successful sample collection is considered if collected within 5 minutes from starting the technique till the first urine dripping.

Results

- 63 newborns with a mean age of 2.075 days. Including 44 boys and 19 girls.

- Indications for urine collection
  - 5 Neonatal jaundice
  - 24 suspected UTI
  - 7 renal anomaly
  - 27 renal pelvis dilatation.

- 95.24% Success rate for collecting the sample within 5 minutes (n=60/63).

- Mean Time spent collecting the sample from the start of the maneuver till the first urine dripping was 126.4 sec (136.3 sec for boys and 100 sec for girls).

- 63.33% (n=38/63) samples collected in less than 60 sec, with a mean time of 56.67 sec.

- 3 cases failed clean catch urine sampling:
  - 1 failed to collect the sample, but the test was repeated again and a sample was successfully obtained in 57sec.
  - 2 samples obtained after 5 minutes (8.25 min and 15.08 min) which exceeds the time limit mentioned. These 2 babies were stable and calm throughout the procedure.
  - There were no complications apart from controlled crying that occurred in 72% of newborns.

- There were no statistically representative differences found with regard to sex in relation to success rate or time of sample collection.

Conclusions

- Quick-Wee technique in an easy, safe, non-invasive and fast way for clean catch urine sample in a majority of newborn babies.

- This technique also saves hospital resources needed for other invasive techniques, plus avoiding their complications, failure rates, and long waiting times that might delay management needed.