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The effect of bladder and lumbar stimulation technique for collection of urine in newborns

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Background & Objectives: Sign and symptoms of urinary tract infections (UTI) are not specific in infants and young children, fever being the commonest sign. Therefore, collecting urine samples for culture is required to diagnose or exclude UTI. Obtaining a clean catch urine sample in neonates and infants is a great challenge as it is unpredictable, time consuming and requires lot of patience. The objective of the study was to determine the effect of Bladder and Lumbar Stimulation Technique (BLST) for collection of midstream urine in newborns and to evaluate contamination rates of urine samples collected.

Methods: An experimental research was conducted in BPKIHS, Dharan, Nepal including total of 54 term newborns. Urine culture was indicated for different reasons to the admitted newborns. They were randomly assigned either to the experimental group (n=27) or the control group (n=27). Twenty-five minutes after feeding, the genitals and perineal area of the babies were cleaned. The newborns were held under the armpits with legs dangling. Bladder and Lumbar stimulation technique was only applied to the newborns in the experimental group. Success was defined as collection of urine sample within 5 minutes (<300s) of starting the stimulation maneuver in the experimental group and of holding under the armpits in the control group.

Results: The success rate of urine collection was significantly higher in the experimental group (88.88%) than in the control group (25.92%) $p < 0.001$. The median time for sample collection was 1.07minutes (64.2s) [IQR=1.52minutes (91.2s)] in experimental group and 1.52minutes (91.2s) [IQR= 2.78 minutes (166.8s) for control group ($p=0.069$). Contamination was not found in urine samples collected in both the groups.

Conclusion: The study suggests that the bladder and lumbar stimulation technique is safe, quick and effective way of collecting midstream clean catch urine in newborns.

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