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Role of neurosonogram in critical ill patients who is admitted in NICU

[1]*A.RUPESH RAO, [2]AMAR TAKSANDE

ABSTRACT--*Neonates who was born premature or sick preterm and term are likely to developed cns abnormality,neurosonogram help to find CNS abnormality early and manage accordingly.Correlation of CNS abnormality with gestational age. Correlation of CNS abnormality with neonatal outcome.All seriously ill neonates admitted to Neonatal ICU will be chosen as per the inclusion criteria on selective pattern and neurosonogram will be done by radiologist on particular days. If neurosonography reveals any positive findings, baby will be review up for any sequelae. Follow up neurosonogram will be done in the case of presence of any finding. Neonates will be followed till cured and discharge from Neonatal ICU.The chance of neurosonogram abnormalities in high-risk neonates is more compared to normal neonate. Intracranial bleed, cerebral edema, periventricular leukomalacia, hyperechogenic thalami, ventriculomegaly are some are findings.neurosonogram help to detect early cns abnormality in critical ill neonates.*

KEYWORDS- *neurosonogram, neonatal icu, high risk neonate.*

I. INTRODUCTION

Neurosonogram is preferred to detect any cns abnormality in neonate, it has numerous uses.It can be use again and again to detect any ongoing changes. Neurosonogram is the most widely used neuro imaging modality in patient is admitted in nicu.Nusg machines can be transported easily, the images can be done at bedside easily in the Neonatal ICU and there is decreased chance of sepsis to neonate by preventing taking neonates outside the Nicu for CT or MRI. Neurosonogram is cost effective and consider as a safer technique in the neonatal group due to the absent of harm full effect of radiation, as in CT, and avoiding the need of sedative required for MRI (1-5). Any baby who is term,preterm,born due to high risk factor like any maternal illness who is within 28 days can be consider as critical ill neonates. Neurosonogram plays vital role in neurological outcome of these severely ill neonates.With advance in latest technology there is varaity of nusg maschine which can give high quality image with more clear picture which can give more information about prognosis of disease (6-11).

It can help in serial monitoring of various disease like brain abscess, encephalopathy and seizures in the term infant and the further monitoring of hypoxic ischemic brain injury. Most of the hospital perform early screening of neonate who is at highr risk and kept them for futher follow up if any abnormality is find. These evaluations are done to see the presence of intracranial haemorrhage and helps in guide choice of therapies that may exacerbate the risk of further haemorrhage, and to counsel families about neurodevelopment outcomes. Neurosonogram help in the finding the sequale of HIE and outcome of the same.and also hep to detect any congenital or acquired diseas if any there and monitoring of the same. The finding of neurosonogram depends upon the experienced doctor.when

*[1]*JUNIORRESIDENT, DEPARTMENTOFPEDIATRICS, JNMC, (DU), DMIMS, #G6, YASHODA PG BOYS HOSTEL,SAWANGI,WARDHA,442001rupeshrao38@gmail.com,9505152503*

[2]PROFESSOR, DEPARTMENTOFPEDIATRICS, JNMC, (DU), DMIMS, amar.taksande@gmail.com,9822369233

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performed as per protocol this can help in diagnosis and to see ongoing changes in brain. Neurosonogram can be used as many time it required because there is no adverse effect to that (12-21).

In neonate many sutures are still open in them acoustic window can be used to see brain,in many case a final outcome and treatment advice can be done with neurosonogram, such as in, new born with congenital malformations.

II. OBJECTIVE

To assess Correlation of CNS abnormality with gestational age.

III. METHODS

Study design: Descriptive, Cross-sectional study

Setting:The AVBRH, Sawangi is the rural medical college located in Maharashtra. This study will be conducted in NEONATAL ICU, Department of Pediatrics, in Jawaharlal Nehru Medical College & AVBRH Hospital, Sawangi, Wardha, from September 2019 to September 2021.

Participants:

IV. INCLUSION CRITERIA

Critically ill neonates in NEONATAL ICU.

V. EXCLUSION CRITERIA

Term neonate with hyperbilirubinemia.Variables: in case of any abnormal finding in brain follow up neurosonogram will be done to see any prognosis of disease.neurosonogram will be done till baby is either discharged or death.

Study size: Precision (%)=80Desired confidence level (%)=95No.of diseased subjects neede=123Sample size=125

Quantitative variables: in critical ill neonates observe cns abnormality like hemorragic ischemic,brain cyst,calcification,brain abscess.neurosonogram also help in to see any early changes in brain before developing the disease and subsequent monitoring of same.

Statistical methods:descriptive method was used to study these and values are used in -/+ standard deviation.

Chi-square was used in these study and also used to divide in two different group.

VI. EXPECTED OUTCOMES/RESULTS

Participants: all critical ill neonates admitted in neonatal icu except baby have ttn and term neonate with hyperbilirubinemia,preterm are having more chance of cns abnormality then other,nusg can be easily performed in neonate because easily avalibility,low cost and no radiation.

Outcome data: neurosonogram help in diagnosis and any changes which occure in brain and monitoring of the same before it developed in to complicate things.it also help in to monitoring of disease and whether to stop or continues the antibiotics.

Main results: :descriptive analysis is used for result and values are compare in -/+ standard .

Chi-square will be used in these study and also used to divide in two different group.

VII. DISCUSSION

Outcomes will help to detect any abnormality before it develop by screen in high risk group and serial monitoring of diseased which is already developed. A number of different studies having correlation with the conditions in this study were explored (22-49). Also local environmental factors in this study area in relation to different conditions were explored (50-70).

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