

Neurodevelopmental outcomes at 1 year in infants of mothers who tested positive for SARS-CoV-2 during pregnancy (*JAMA Netw Open.* 2022;5:e2215787)

The likely association of COVID-19 infection of mother with children neurodevelopment outcome is not yet established. SARS-CoV-2 might enter the central nervous system from the nasal mucosa, lamina cribrosa, and olfactory bulb or through retrograde axonal transport. The virus has neurovirulence, activating cytokine storms, affecting brain vasculature and blood-brain barrier. Studies have revealed that SARS-CoV-2 infection in pregnancy has adverse neurodevelopmental outcomes in progeny, like autism spectrum disorders, schizophrenia, cerebral palsy, cognitive dysfunction, bipolar disorder, and anxiety and depression. In this prospective cohort study, the neurodevelopmental status of 298 infants born to SARS-CoV-2 infection positive mothers, was assessed at 10-12 months post-discharge using the Ages and Stages Questionnaire, 3rd edition (ASQ-3). 90% infants had favorable outcomes and only 10% exhibited developmental delays. Maximum women had SARS-CoV-2 infection in their third trimester. The majority of developmental delays among infants was in those whose mothers had SARS-CoV-2 infections during the first ($P=0.039$) and second trimesters ($P=0.001$) than in those whose mothers had SARS-CoV-2 infections during the third trimester. Although the neurodevelopmental outcomes of infants born to mothers with SARS-CoV-2 infections appeared favorable, more studies with larger sample sizes and prolonged follow-up periods are essential.

Associations of secretory activation breast milk biomarkers with breastfeeding outcome measures (*J Pediatr.* 2022;S0022-3476(22)00877-0)

The foremost cause for early discontinuation of breastfeeding is mother's perception of inadequate milk supply. In the initial phase of postpartum, the transition of mammary gland from secretory differentiation to activation is depicted by bio-markers, along with the initiation of copious milk production. In secretory activation, milk composition changes occurs sequentially, which occurs within 72 hours for healthy mothers. There occurs a decrease in protein and sodium concentrations, and sodium-potassium ratio. Later milk synthesis occurs by upregulation of the trans cellular pathways), resulting in

increase in lactose and citrate concentration and closure of paracellular pathways leading to decrease in sodium, protein, and sodium-potassium ratio, and an increase in potassium and lactose. This prospective, longitudinal descriptive study collected ante partum, D10, and day 60 postpartum (D60) questionnaire data, and D10 milk samples. Protein, lactose, and citrate were analyzed with enzymatic spectrophotometric assays. Sodium and potassium were analyzed with inductively coupled plasma optical emission spectrophotometry. 92 mothers provided a D10 breastmilk sample and completed D10 questionnaires, and D60 questionnaires were completed by 83. Mothers with impaired secretory activation sodium (>23.0 mM) on day 10, seemingly to report D10 insufficient milk supply perception; and less D10 feeding/pumping frequency per day. They also had partial breastfeeding at D60. Mothers with D10 impaired secretory activation sodium to potassium ratio >0.8 , were more presumable to partially breastfeed at D60. As, elevated milk sodium and sodium to potassium ratios are biomarkers related to low milk supply, so instantaneous milk testing can be useful in recognizing lactation compromise and can help in improving lactation duration.

Quality improvement initiative to improve infant safe sleep practices in the newborn nursery (*BMJ Open Qual.* 2022;11:e001834)

American Academy of Pediatrics (AAP) safe sleep recommendations in 1992 and the initiation of the 'Back to Sleep' campaign had led to a reduction in sudden infant death syndrome (SIDS). Still a significant number of deaths are attributed to SIDS. The practicing of safe sleep practices (SSP) within a hospital has shown to improve SSP at home. A prospective study was done with the use of quality improvement (QI) methodology, to increase adherence to infant safe sleep practices, with a goal to improve the proportion of infants having 'perfect sleep' to 70% within a 1-year period. Multiple Plan-Do-Study-Act cycles (7 cycles) were performed. Initial cycles targeted nurse and parental education, while later cycles focused on providing sleep sacks/wearable blankets for the infants. The percentage of infants with 'perfect sleep' increased from a baseline of 41.9% to 67.3%. And even the progresses were sustained over 12 months later.

BIJAYLAXMI BEHERA
jollybubu2008@gmail.com