

Inexpensive Rapid Diagnosis of HCV

In 2016, WHO decided to eliminate viral hepatitis as a public health threat by 2030, by setting the targets to reduce the new chronic infections by 90% and HCV mortality by 65%. With the availability of directly acting antivirals (DAA) pan-genotypic treatment regimens this seems to be an achievable target, but still the limited availability of time consuming expensive diagnostic tests is a big hurdle to be crossed. Recently, a team from Florida Atlantic University, USA developed a reverse-transcription loop-mediated isothermal amplification (RT-LAMP)-based diagnostic test for rapid detection of hepatitis C virus infection. All the steps required for the detection of HCV - nucleic acid isolation, purification, amplification, and detection are incorporated in a small microfluidic chip. Results are based on colorimetric method, which can be detected by naked eye, and are available in 45 minutes only. The best part of this chip is that it is inexpensive, disposable, fully self-driven, does not require any trained manpower, with a sensitivity to detect ~500 viral copies/mL. Features like low cost, and automated accurate results make this an ideal test to be considered for HCV diagnosis in low- and middle income countries, which need mass screening to achieve the targets set by WHO for 2030. (*Biosensors* 5 May, 2022)

Telomere Length an Indicator of Hypertension

Telomere is the segment of nucleoprotein complexes situated at the end of each chromosome, consists of repetitive sequences of DNA. Telomeres decide the maximum life span of a cell, as during each division a part of telomere is lost and shortening of the length of telomere beyond a certain point prevents further division and the cell dies. Thus, the length of telomere at a particular point is biological indicator of age of the cell. The length of telomere (TL) at birth is variable and to some extent it can predict the later life TL. Many of the antenatal and perinatal factors are known to play an important role in the development of adult onset diseases. Cardiovascular diseases are one such group, which may be related to the biological cell aging. Studies have shown a relation between the telomere length and cardio-vascular disease and mortality in adults. In a recent study from Belgium, researchers studied the association of newborn telomere length with the early life blood pressures in a prospective birth cohort of 485 newborns with a mean follow up of 4.6 years. The results of collected data showed that a 1-IQR increase in cord blood TL was associated with lower diastolic blood pressure (-1.54 mmHg; 95% CI -2.36 to -0.72), lower mean arterial pressure (-1.18 mmHg; 95% CI -1.89 to -0.46), and lower odds of having high BP at 4 to 6 years age (aOR 0.72; 95% CI 0.53 to 0.98). Thus indicating the role of TL in the onset of the cardiovascular health at birth. (*JAMA Network Open* 05 August 2022)

Injury Pain Management in Children

Early life experiences by a developing brain form the foundation of the beliefs and behavior during the adulthood, especially in reference to the injury pain. Studies have shown that childhood pain experiences can be modulated by multiple factors like response of parent/caregiver, relationship with peers/siblings, associated events, and social and environmental factors. Teaching the children, “How to handle everyday pain” at a young age helps them in better understanding and handling of pain as a grown up. In order to identify the key messages to be used by the parents while talking with children about everyday pain, in order to promote recovery and adaptive pain behaviors, a Delphi survey was done by the University of South Australia. Pediatric pain specialists, child psychologists, development experts, educators and parents were part of the team. The expert consensus was achieved that caregivers must teach the children about the relation between injury and pain, reassuring them after injury, body’s healing mechanism, supporting child’s emotions by letting them express themselves, by involving the child in first-aid care of self and others. According to the experts, these messages when delivered effectively may be helpful in promoting adaptive pain behavior, and decrease the risk of development of pain problems in later life. (*European Journal of Pain* 13 July, 2022)

Oral Lactase - Treatment of Infantile Colic

Infantile colic is one of the common complaints encountered by the pediatricians in outpatient department. According to ROME IV criteria, it is characterized by recurrent and prolonged episodes of irritability, crying, or fussing in an infant aged <5 months without an identifiable cause. Persistent crying of the child with no relief makes the caregiver feel insecure about their nurturing skills. In the past, multiple treatment options like use of pain relieving agents, dietary modifications, parent training program, and the probiotics for infantile colic were tried but of no help. Systematic reviews assessing the role of probiotics in treatment of infantile colic showed some promise, but another review with a larger number of participants did not report similar results. In a recent study, the researchers evaluated the role of oral lactase in the management of infantile colic. This was a randomized, double-blind, placebo-controlled trial involving 162 infants, allocated into two groups receiving either 5 drops of oral lactase (80 infants) or placebo (82 infants) in the milk for a duration of four weeks. The findings showed a significantly lower number of days with colic in the infants receiving lactase compared to those receiving placebo (12.1 (7.8) vs 17.6 (8.4); $P < 0.001$), and the parental satisfaction was also better in the lactase receiving group at the end of 4th week. The results of this study provide promising results for the treatment of a condition with no definitive treatment. (*BMC Pediatrics* 3 August, 2022)

RAJESH KUMAR MEENA
raj.mamc@gmail.com