ELUCIDATING THE DYNAMIC UNDERLYING INFLUENCE OF MATERNAL PRENATAL DEPRESSION AND ANXIETY ON INFANT PAIN BEHAVIOR SELF-REGULATION

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INTRODUCTION / AIM

Elucidating dynamic factors and mechanism that may underlie and account for variability and inconsistency in infant pain reactivity and recovery over time can further infant pain assessment and treatment. Prior studies have shown that infant prenatal exposure to maternal depression and anxiety (MDA) is linked to altered infant pain reactivity, but findings are inconclusive about MDA dynamic impacts on recovery.

This study quantified the temporal profile of behavioral response and recovery to routine heel lance (HL) of full-term newborns with and without prenatal MDA exposure. Aims were to examine whether MDA were associated with alterations in time-based measures and patterning of infant pain behavior.

METHODS

Videotaped facial, body and cry behaviors of 21 full-term newborns were coded second-by-second for the duration of HL (baseline, HL, post-HL) using validated behavioral coding systems. Mean heart rate and proportion of time infants spent exhibiting behavioral measures were compared between infant groups and over sub-phases of HL. Simple regressions, latency and Yule-Q measures of effect size examined which behaviors were predicted by prenatal-MDA and magnitude of sequential association between first and subsequent behavior.

RESULTS

During HL, all infants reacted immediately and substantially on heart rate, facial, body and cry measures. Facial reactivity was followed within 2s by body and cry behavior. There were no group differences in mean HR or in magnitude of initial behavioral reactions. But during post-HL, MDA-exposed infants spent more time crying in a weak/exhausted manner and displayed strained and erratic limb movement and immobility.

DISCUSSION / CONCLUSIONS

Time based and sequential findings enhance understanding of infants’ complex and often ambiguous responses to pain. Delayed recovery in MDA-exposed infants suggest diminished capacities for self-regulation of noxious distress. These findings add to the relevance of MDA as a complex dynamic underlying condition that is already known to influence pregnancy and health outcomes of mothers and infants (premature birth, neurobehavioral dysregulation).

Clinicians can make use of the three patterns of altered pain behavior recovery when assessing pain in MDA exposed infants and when evaluating the effectiveness of pain treatments. Future
research is needed to help determine if the delay in recovery is transitory and if recovery is further negatively impacted in infants exposed to repeated painful procedures.

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