DO INFANTS BORN VERY PRETERM REACT TO NOSOCOMIAL ODORS PRESENT IN THEIR INCUBATORS? EVIDENCE FROM PHYSIOLOGIC DATA

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Background: Infants born Very preterm (IBVP) are sensitive to odors, but little is known about their reactivity to nosocomial odors conveyed by healthcare/cleaning products (aqueous alcoholic solution, adhesive remover, disinfectant, detergent, soap, ointment).

Objective: To examine whether these odorous substances (OS) are detected by IBVP and whether they can impact their physiological parameters.

Patients/methods: 25 clinically stable IBVP (29.5 [26-32] weeks GA) were exposed during 10s to 10 OS randomly presented on a cotton swab. The intensity of the OS was equalized on naturalistic level. VPI were tested in their incubator during episodes of active sleep, by an investigator blind to the stimulus nature. Heart Rate (HR), Respiratory Rate (RR) and Oxygen Saturation (SaO₂) were recorded 10s before (baseline), 10s during, and 30sec after stimulation. ANOVA was used to analyze their variations.

Results: 8 of 10 OS induced significant change indicating that newborn react to their presence. Different profiles of response (immediate or late, variations in one or several parameters) were observed between the OS. Four main profiles could be distinguished: a decrease in RR, with an increase or not in HR, was the most frequent response. Most reactive OS induced a decrease in RR averaging 30%. These last reaction was observed for nearly half of IBVP and could be associated with episodes of desaturation or bradycardia.

Conclusion: IBVP are highly reactive to nosocomial OS present in their incubator. Even a brief exposure to them can impair their physiological equilibrium. Minimizing infants exposure to these OS would be beneficial.