

NIGHT SLEEP CHRONOBIOLOGICAL ORGANIZATION IN NEW BORN

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Sleep studies in newborn and related disease, as Sudden Infant Death Syndroms (SIDS) are underlayed by hypothetisis of a brain dysfunction or brain dysmaturaty.

Our work was performed to try to lighten three points:

- to define invariants of maturation.
- to identify which index may be more relevant of some pathological circumstances.
- to try to correlate cyclic disturbance of sleep with occurrence of breathing disorders, or gastro-oesophageal regurgitation.

Patients and Methods.

884 night polygraphics were recorded in newborns from 2, to 52 weeks in several clinical circumstances:

- I - Control (50).
- II - Sibling of Dead Infants by SIDS (408).
- III - Clinical accident with reanimation, called "Near Miss" (246).
- IV - Prematuraly borns (180).

Analysis of polygraphic data : number and duration of awakesness levels.

A : Awakesness, SS : Superficial Sleep, SWS : Slow Wave Sleep, REM : Paradoxical Sleep, IS : Intermediate Sleep. It was a visual scoring then computation on a PDP 11 - 34. Internal organization was indiced by computed parameters of ultradian cycles (regularity of repartition during the night) and of circadian cycles reflected by differences between beginning and end of night.

Two Way Variances analysis was performed for identification of age related changes, and specifications which may be related to Reflux (217 nights) and Breath disorder (obstructive or mixed apneas 524 nights).

Results indicate important inter-individual differences and the difficulty for definition of "normal characteristics". Age related change for a main ultradian organization to a main circadian organization are maximum about 3 months, with a strong correlation with sleep associated disorders. It is assumed that maturational coupling of autonomous and exteroceptive nervous systems is critically time dependant.