Brazelton's Neonatal Behavioral Assesment Scale

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Conceptual Bases of NBAS
. The newborn infant is both competent and complexly organized.
. The newborn infant has ability to interact with the environment and to deal selectively with environmental stimuli.
. The goal of NBAS is to identify and describe individual difference in neonatal behavior (profile of behavior : competencies, strengths, difficulties, deviation)
. NBAS describes infant's autonomic, motor, state, social attention system.
   - this integrative task proceeds in hierarchical fashion.
. NBAS is not a series of discrete stimulus-response presentation but rather an interactive assessment.
. NBAS is only one glimpse into the continuum of the infant's adjustment to labor, delivery, and his new environment
. The newborn's behavior at birth is phenotypic & genotypic.
. Infant's response to internal and external stimuli is state-related.
State is an expression of his internal organization and of his ability to master and control his reaction to external stimuli. Thus State is the base for understanding each baby.
  1) deep sleep state
  2) light sleep state
  3) drowsy state
  4) quite alert state
  5) fussy(awake and active)
  6) crying

Content of NBAS
28 Behavioral items (9점척도)
18 Reflex items (4점척도)
 7 Supplement items (9점척도) - high risk babies

Behaviroal items
1. Habituation
. response decrement to light, rattle, bell
. tactile stimulation to the foot
2. Social -interactive
. orientation to animate visual(V)
.   animate V+A
.   inanimate V

- inanimate V+A
- animate auditory(A)
- inanimate A
- Alertness

3. Motor system
   - general tone
   - motor maturity
   - pull to sit
   - defensive movement
   - activity level

4. State organization
   - peak of excitement
   - rapidity of build-up
   - irritability
   - lability of state

5. State regulation
   - cuddliness
   - consolability
   - self-quieting
   - hand to mouth

6. Autonomic system
   - tremulousness
   - startles
   - lability of skin color
   - smiles

Reflex items
- plantar grasp
- babinski
- ankle clonus
- rooting
- sucking
- galabella
- passive resist - leg & arms
- palmar grasp
- placing
- standing
- walking
- crawling
- incurvation
- tonic deviation of head and eye

. nystagmus
. tonic neck reflex
. moro
Supplementary items
. Quality of alertness
. Cost of attention
. Examiner facilitation
. General irritability
. Robustness/Endurance
. State regulation
. Examiner's emotional response

. 아기행동 변화 패튼을 보기 위하여 최소한 2번, 가능하면 3번 이상 검사하는 것이 좋다.
. 첫 검사는 분만 스트레스가 좀 가신 생후 2-3일 경이 적당하고, 2차 검사는 생후 7-10일,
  3차 검사는 생후 14일이나 30일경이 좋다.
. 반복검사 결과에서 나오는 패턴은 추후 발달을 예측하는데 중요 자료가 된다.
. NBAS는 신경과적 검사도 포함하므로 gross neurological abnormality를 찾아 낼 수 있으
  나 신경과적 검사가 목적이 아니다. 3개 항목에서 비정상적인 점수가 나오면 정밀검사를
  의뢰한다.

Testing Contdition and Procedure
1. Envroment
. Quiet, semi-dark room
. 22-27 ℃
. Midway between feedings

. Gestational age 36-44wks
. Full-term baby (0 - 2M)
. Light sleep state

. 소요시간 : 30-45분
. 검사 적용시기 : 민활한 상태에 따라서 결정
 (예: habituation : light sleep state; social interactive : quiet alert state)

. 주의점 : over-stress, prematurity, sick baby

2. Training Examiner
NBAS는 신생아와 검사자 간에 역동적인 관계 속에서 아기의 행동을 평가하도록 고안되었
기 때문에 다른 전통적인 평가법보다 상호작용적인 특성을 가지고 있으므로 검사자 훈련이
매우 중요하다

. Best performance
. Examiner's flexibility
. Reliability in scoring - 90% interobserver agreement
. Competence in administration - 최소한 2-25 babies

Two phase training of examiners on NBAS
1. self-training phase
2. reliability training

Uses of the NBAS
1. Studies of High risk infants
    . Antenatal nutritional variables - Vt B_6 deficiency
    . Infant of diabetic mother
    . Intrauterine growth retardation :
    . Jaundice exposed to phototherapy :
    . The effect of neonatal seizure on behaviors :
2. Studies on the effects of obstetric medication
    . Epidural anesthesia for c/s
    . Vaginal delivery vs c/s delivery
3. Studies on the effects of maternal substance abuse
    . Cocaine, marijuana, alcohol, smoking
4. Cross-cultural comparisons of newborn behavior
    . 각국의 신생아 행동 특성을 비교
5. Predication studies
    . Developmental delay (Bayley scale)
    . Temperament
    . Colic infant
6. Uses of the NBAS as a form of intervention.
    . 부모교육 - 아기행동 레퍼토리, 능력, 기질 이해; 지지적 관계, caregiveing 환경 향상
    . 부모역할 스트레스와 우울 감소

Summary
. Comprehensive behavioral assessment scale
. Caregiving program for the parents
. Quality of the parent-clinician relationship

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