EDITORIAL

SIMPLIFIED DEVELOPMENTAL ASSESSMENT

The clinical entity of neuro-developmental syndromes is a human tragedy from the point of view of the helpless parents. It is of the utmost importance that we are able to detect these children early and help support the parents to cope up with the child. Developmental deficits occur among children in three broad categories of risk and hence should be considered for early interventional therapy programmes.

A. Established Risk

This category includes infants or children whose diagnosed medical disorders are strongly associated with developmental delays, for example Downs' Syndrome, hydrocephalus, cerebral palsy, hearing and visual impairments and other congenital anomalies.

B. Environmental Risk

This category includes infants or children who are at risk for delayed development because of limited early environmental experiences, for example very young mothers, low socio-economic status, single parent, *etc*.

C. Biological Risk

This category includes infants and children with a history of prenatal, neonatal, or early developmental events suggestive of insults to the developing central nervous system for example prematurity, low birth weight, asphyxiated and jaundiced babies, all together known as highrisk babies. For the majority of biological insults most survivors will not develop the developmental complications for which they have an increased epidemiological risk(1). Also severe developmental disabilities are commonly and idiopathically encountered in infants with no apparent biological risk.

Early intervention for infants and children at risk for developmental problems have primarily a prevention orientation with a particular recent focus on "doubly vulnerable" infant (those at additive risk both environmentally and biologically). But it is important to remember that effective developmental intervention should always be preceded by a thorough developmental diagnosis(2). There should be particular emphasis on soft neurological signs because the persistence of neuromaturational signs beyond the age at which they usually disappear has been associated with learning disorders, behavioral problems and other developmental disorders(3).

Tools for Developmental Assessment

More than the sensitivity, specificity, positive and negative predictive value of a given developmental testing tool, it is the experience and common sense of the clinician that is best useful in a community

setting. But it is even more important to remember that undue parental anxiety should not be created by an unwanted premature judgement. The large majority of developmental delays could be identified by using cut off points for four simple developmental milestones namely social smile by completed 2 months, head holding by completed 4 months, independent sitting by completed 8 months and standing on both legs by completed 12 months. Those who fail these simple milestones must have a formal developmental assessment.

The Trivandrum Developmental Screening Chart, (TDSC) designed and validated(4) at the Child Development Center, SAT Hospital, Medical College, Trivandrum is a simple tool that could be administered by Anganwadi workers or any person with minimal training. This is based on the normal range described for 17 simple test items carefully chosen from among 67 motor items and 163 mental items in Bayley Scales of Infant Development (Baroda norms)(5). A pen and a bunch of keys is probably all that is required as the testing tool. Validation of TDSC against Denver Developmental Screening Test (DDST) using sample populations from a Kerala coastal village and babies attending well baby clinic of SAT Hospital showed a sensitivity of 66.7% and a specificity of 78.8%.

Denver scales originally designed as a screening test is now increasingly used as a tool to assess developmental delay. From the point of view of planning appropriate interventional therapy Denver scales is particularly useful because delay in gross motor, fine motor, language and Personal-social development could be identified separately. Validation of Denver Scales against Bayley scales done by Nair(6) using a sample of 328 one year old at-risk babies on follow up had shown a sensitivity of 78%, specificity of 95%, positive predictive value of 98% and an accuracy of 94%. In the same sample Denver Scales gave a developmental delay prevalence of 11% as against 8% by Bayley Scales. Considering the simplicity and feasibility of Denver Scales as against Bayley Scales, Denver Scales may be recommended for large scale high-risk baby follow up programs.

Baroda Development Screening test for infants(7) is based on local norms and is developed to suit the level of training and working conditions of our health workers. Abridged Bayley Scales(8) have also been used as an easy simple developmental tool with good results.

Norms for the Bayley Scales are considered to be the most representative for children 1 to 30 months of age and the scores have proved to be reliable. In a randomized controlled trial of an early interventional therapy model(9), conducted at the Child Development Center, SAT Hospital among 900 at-risk babies, Bayley Scales have been successfully used to demonstrate a clinically and statistically significant positive effect of early intervention.

Many workers in different parts of the country have been using local versions of some simple developmental testing tools. There is absolutely no need to replace some of these time tested tools with more sophisticated ones unless it is for a research project or to collect uniform national data base.

Preschool entry and school entry are vital points at which simple developmental assessment could be incorporated on a large scale and this should go long way in reducing school drop out rate. Obviously sophisticated tests like Binet-Kamath (Stanford-Binet)(10) or Weschler intelli-

gence scale for children(11) can be used only in selected few cases. Hence what may be more appropriate is the Draw-a-man test(12) for Indian children which has the advantage that the drawing could be made in any remote setting and the scoring done in a major center.

Early screening for visual and hearing impairments is of utmost importance. By and large clinical screening is all that is necessary. In case of high-risk babies particularly at risk for visual or hearing impairments Stycar vision and Stycar hearing test(13) has been found to be useful and easy to administer.

It is not a small task to reach out to all those infants who may benefit by a simple developmental screening. The major opportunities(14) for developmental screening may be through the large network of PHCs and Sub Centers, ICDS network, well baby clinics, post partum program, family welfare programs, child welfare programs of Governmental and Non Governmental organizations, research projects, national surveys, Baby shows, melas, festivals, and Mahila Samajan activities, *etc*. There is a never ending list of opportunities if only we look at the possibilities.

The ultimate test of a successful developmental management is shown only by a normal adjustment at school and normal scholastic performance by age of 7 or 8 years. By no means developmental assessment results should be used as a criteria to predict future IQ, although normal developmental results throughout infancy and early childhood is indicative of average scholastic performance later. There is a lot of difference of opinion as to whether the development studies in the first 3 years have predictive value. In general screening tests are of little value unless they result in intervention and treatment.

M.K.C. Nair,
Associate Professor of Pediatrics,
Child Development Centre,
SAT Hospital, Medical College,
Trivandrum.

REFERENCES

1. Scott KG, Masi W. The outcome from and utility of registers of risk. *In:* Infants Born at Risk. New York, Ed Field TM. Spectrum Publications, 1979, pp 485-496.
2. Philip E, Nair MKC, George B, Sathy N. Early detection and prevention of developmental disability. Kerala J Psych 1990, 5: 15-19.
3. Kumar A, Nair MKC, George B, Sathy N. Diagnostic approach to a child with developmental disorder. Kerala J Psych 1990, 5: 20-26.
4. Nair MKC, George B. Validation of a developmental screening chart against DDST (Under publication).
5. Pathak P. Manual for Using Bayley Scales of Infant Development Based on Baroda Studies and Baroda Norms. India, MS University of Baroda, 1973.
6. Nair MKC. Validation of DDST against Bayley Scales. Paper presented at International Clinical Epidemiology Network (INCLEN), Mombasa, Kenya, January 20-27, 1991.
7. Phatak At, Khurana B. Baroda Development Screening test for infants. Indian Pediatr 1991, 28: 31-37.
8. Verma A, Phatak P, Gopalan V, Kumar N. Abridged Mental and Motor Scales of Infant Development (Research form 1961). Department of Child Development, Faculty of Home Science, the MS University of Baroda, Baroda, 1973.

9. Nair MKC. A randomized controlled trial of an early interventional therapy model among at risk babies. Paper presented at the Second Joint Convention, Jamshedpur of ISO-PARB and National Neonatology Forum, 24-25 February, 1991.

10. Terman LM, Merrill MA. Standford Binet Intelligence Scale, 3rd revision, London, Harrap, 1961.

11. Wechsler D. Wechsler Intelligence Scale for Children, New York: Psychological Corporation, Revised 1974.

12. Phatak P. Draw-a-man test for Indian Children, II edn. Pune, Anand Agencies, 1987.

13. Sheridean MD. Stycar Vision and Hearing. London, NFER-Nelson, 1984.

14. Nair MKC. A community model for early detection and prevention of mental handicap. Paper presented at the First Pan-Common Wealth Global Workshop on Global Strategy for Prevention of Mental Handicap in Developing Countries, New Delhi, 5-9 February 1990.

NOTES AND NEWS

PEDIATRIC AND NEONATAL EMERGENCIES
Publication of Indian Pediatrics

The book provides clear guidelines for the diagnosis and management of various problems that constitute emergencies. Prompt recognition of emergencies along with their appropriate and adequate initial management is essential to save lives and prevent complications. In a number of situations the doctors can not do very much and must send the patient to the casualty services of a hospital. One needs to be aware of such conditions. What not to do is also important. Emergencies in the newborn present very different and often unique problems that require special skills and proficiency for their recognition and management. A group of outstanding contributors have presented the various topics in an informative and lucid manner. The book has 58 chapters spread over 500 pages.

Pediatricians and physicians having first contact with emergencies in children as well as those responsible for the subsequent critical and intensive care will find this publication useful. It will be of particular interest for Postgraduate students.

The book can be procured from 'Indian Pediatrics' at a price of Rs. 150/- for soft cover or Rs. 175/- for hard cover. This price includes postal charges. The entire benefits from the sale of this book will go to the "Indian Pediatrics". Demand drafts only, should be drawn in favour of Indian Pediatrics and mailed to the Editor.