소아재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Visual behavior in Full term and Preterm infants under 24-months Using PreViAs Questionnaire.

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Introduction

Visual difficulties in infancy are not only limited to ophthalmologic problems such as visual field loss and visual acuity. It has been known that cortical visual impairment is also involved in visual behaviors. Preterm birth is known as a risk factor for neurological deficit and cognitive impairment. Early visual approach will help screening high-risk infants and predicting their neurological and cognitive development, including visual impairment.

Methods

The Preverbal Visual Assessment (PreViAs) questionnaire designed by V. Pueyo et. al, is a useful tool for assessing visual integrative functions in infants under 24 months. All 30 questions can be answered within a short period of time, and each item is related to one or more of four domains (visual attention, visual communication, visual–motor coordination and visual processing) (Table 1). The Preverbal Visual Assessment (PreViAs) questionnaire was administered to full term infants who visited a local pediatric clinic and preterm infants who visited our outpatient clinic. All infants enrolled in the study were under 24 months. The caregivers of 174 full term infants and 204 preterm infants have completed the questionnaire.

Results

The subjects were divided into 6 groups at 4-month intervals. The number of full term infants assigned in each age-group was between 11 and 56. Most of them were assigned in age-group of 12 to 15.99 months (Table 2). The number of preterm infants assigned in each age-group was 2 and 85. The age-group with the largest number of infants was 0 to 3.99 months (Table 2). Each domain was added up by items corresponding to each visual function. The mean score of each domain in the preterm infants was compared to the full term infants reference at matching age group. The mean global score in preterm infants was generally lower than the references, except for age group of 12 to 15.99 months. The

mean scores of visual attention were generally lower than the references, except for age group of 12 to 15.99 months. The mean scores of visual communication were lower than the references between 8 to 11.99 and 16 to 19.99 months. The mean scores of visual motor coordination were lower than the references between 8 to 11.99, 16 to 19.99 and 20 to 23.99 months. The mean scores of visual processing were generally lower than the references, except for age 0 to 3.99 and 16 to 19.99 months (Table 2). The global score showed statistical significance in most age groups except for 0 to 3.99 and 12 to 15.99 months (Figure 1).

Conclusion

The PreViAs questionnaire is an easy and useful tool for assessing the visual performance. Overall, except some age groups, the preterm group generally showed a lower means score distribution for each domain than for the full term group. Based on this study, we expect to use this tool to help early diagnosis of high-risk infants including premature babies with cortical visual impairment.

Table 1. The Preverbal Visual Assessment (PreViAs) questionnaire.

	Question	Domain
1.	Is your child interested in lights and fixes the eyes on them?	VA
2.	Does he/she keep the eyes (for at least a few seconds) on objects or persons?	VA
3.	Is he/she able to look towards a sound source?	VA
4.	Is he/she able to move the eyes quickly between two persons or two objects?	VA
5.	Does he/she follow the movement of a nearby object moving slowly horizontally and vertically?	VA, VMC
6.	Does your child observe his/her own hands?	VA, VMC
7.	Does he/she try to reach for toys or objects with his/her hands?	VA, VMC
8.	Does he/she pick up and manipulate objects, showing interest in them?	VA, VMC, VP
9.	Does he/she turn to a sound source placed behind him/her?	VA, VMC, VP
10.	Does he/she look in a mirror?	VA, VC
11.	Does he/she look at the pictures of a storybook?	VA, VP
12.	Does your child smile when his/her mother or father get close without making any sound?	VC
13.	Does your child smile to people who approach him/her smiling?	VC
14.	Does he/she imitate gestures or greetings?	VC, VP
15.	Does he/she react to strangers by staring at them or being embarrassed?	VC
16.	Does he look at the ground when an object is dropped near him/her?	VMC, VP
17.	Does he/she play with objects taking them in and out of a container?	VMC, VP
18.	Does he/she point to people, objects or drawings that interest him/her?	VMC, VP
19.	Does he/she know where things that interest him are kept at home, as his toys, books, clothing or food?	VMC, VP
20.	Does your child scribble with a pencil or a pen on paper?	VMC, VP
21.	Does he/she imitate painting some strokes?	VMC, VP
22.	Does he/she know where his/her hands, ears, mouth, eyes, ... are?	VMC, VP
23.	Does he/she recognize familiar objects or people?	VP
24.	Does your child react in advance to common situations, such as knowing he/she will eat or go to the street when he/she sees the baby trolley?	VP
25.	Does he/she look at a known person if named?	VP
26.	Does he/she look for what turn things on like a toy switch, light switch, ...?	VP
27.	Does he/she recognize himself in a photo?	VP
28.	Does he/she identify several drawings (like animals, a house, ...)?	VP
29.	Does he/she know what two things are similar?	VP
30.	Is your child interested in making a simple puzzle?	VP

Developed by V. pueyo et. al, Development of the Preverbal Visual Assessment (PreViAs) questionnatre, Early Human Development 90 (2014) 165–168

Abbreviations: VA, visual attention; VC, visual communication; VMC, visuomotor coordination; VP; visual processing

Table 2. The number of full term and preterm infants in each age group, and the mean scores of each visual domain.

Age group (months)	Full term infants						Preterm infants					
	N	Global	VA	VC	VMC	VP	N	Global	VA	VC	VMC	VP
0-4m	11	8.82	6.91	1.64	2.27	1.91	85	7.72	5.89	1.68	2.28	2.01
4-8m	50	16.94	10.52	3.76	6.00	6.50	52	15.40	10.33	3.77	6.17	5.92
8-12m	21	21.05	11.00	4.67	8.14	10.10	31	19.03	10.71	4.16	7.68	9.42
12-16m	56	25.02	10.96	4.80	9.70	14.16	23	25.22	11.00	4.83	10.78	15.09
16-20m	24	28.08	11.00	4.96	11.08	17.08	11	24.45	10.64	4.36	10.36	14.73
20-24m	12	28.83	11.00	4.92	11.25	17.92	2	27.00	11.00	5.00	11.00	16.50
Maximum score		30	11	5	13	20		30	11	5	13	20

Abbreviations: N, Number of infants; VA, visual attention; VC, visual communication; VMC, visuomotor coordination; VP; visual processing

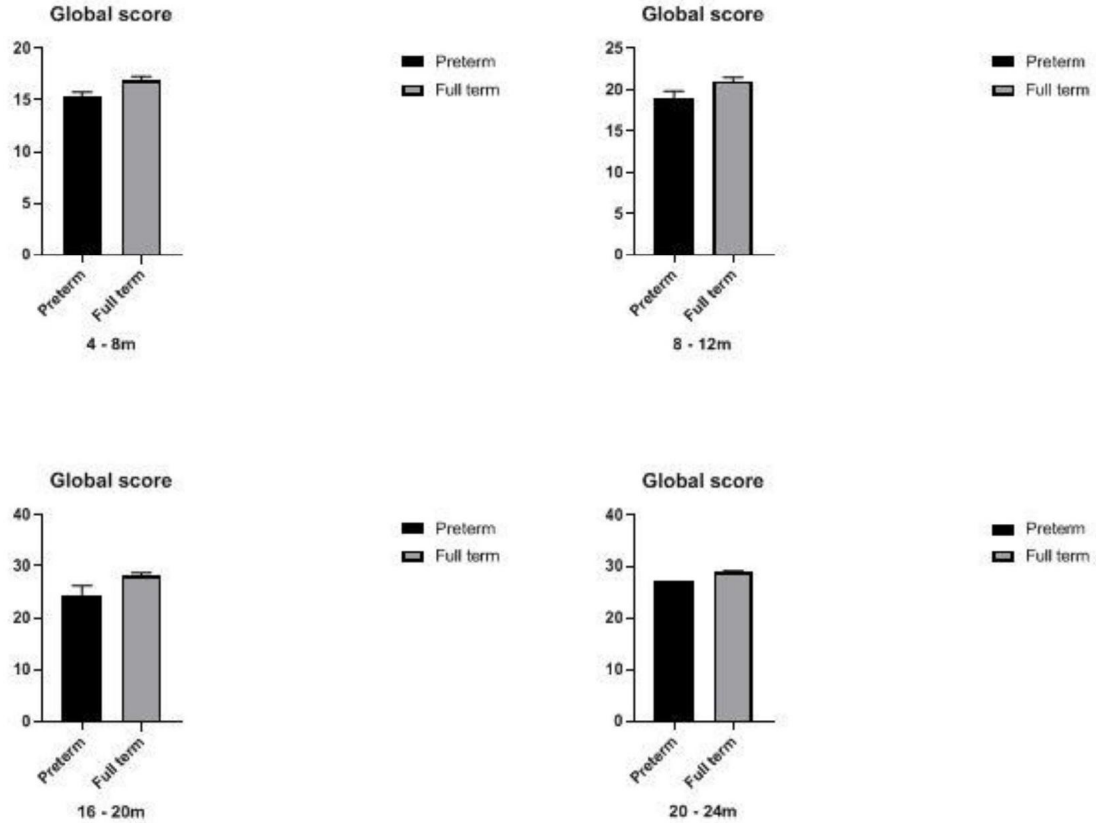

Figure 1. Comparison of global score between full term and preterm infants with statistical significance.