LETTER TO THE EDITOR

The newborn hearing screening in Italy

Screening neonatale dell'udito. Indagine in Italia

Bilateral permanent hearing loss is the most prevalent congenital sensorineural defect [1]. The benefits of early detection and intervention on language development in children with hearing impairment have been proven by several studies [2 3]. Universal newborn hearing screening programs (UNHSP) have been recommended by various international bodies and are accepted worldwide [4]. There are two physiologic techniques usually used for neonatal hearing screening: Transient Evoked Otoacoustic Emissions (TEOAE), and Auditory Brainstem Responses (ABR).

Our experience aimed at making a general survey of:

1. italian hospital maternity wards employing UNHSP, in relation to healthy babies only;
2. total annual births and percent screened in 2003 in Italy and in regional districts;
3. instrumentation;
4. screening protocols;
5. characteristics of the maternity wards adopting UNHSP, in terms of geographical location, annual births, etc.

All maternity wards active until 2003 in Italy were included.

Data were collected by means of a screening survey questionnaire (SSQ) administered either orally or in writing to the birth hospital primary physician, or the program director.

Statistical evaluation

The distribution of the hospitals screened, in terms of geographic area and adoption of the protocol was analysed using the SPSS statistical software package (SPSS, Inc, Chicago, IL)[5].

Census period: from December 2003 to March 2004. Census Coverage estimated > 98%.

In 2003, 145 maternity wards (23.5%) in Italy adopted universal hearing screening programs, for a total of 156,048 newborns screened in 2003 (29.3% of all newborns in Italy?). Geographical coverage: North-West 62.2%, North-East 36.6%, Center 17.3%, South 12%, Islands 5.6%. The international protocols established for newborn hearing screening programs are TEOAE, ABR, or a combination of the two methodologies. The two-stage screening approach (TEOAE/ABR) is the most frequently used protocol (75 hospitals, 51.7%), the TEOAE approach alone (test-retest) is quite common (68 hospitals, 46.8%), and the ABR only (1 stage) is rather uncommon (2 hospitals, 1.3%).

Characteristics of the maternity wards: 105 birth centers adopted UNHSP, of which 72.4% with a mean annual birth rate ≥ 1,000, 40 (27.5%) with a mean annual birth rate < 1,000. Overall, 102 (70.3%) of these maternity wards were part of hospitals located in a city with ≥ 50,000 inhabitants, and 43 (29.6%) were part of hospital located in a rural area ≤ 50,000 inhabitants.

Our results suggest a quick diffusion of newborn hearing screening programs in Italy. So far the issue is limited to some district areas only. The number of children screened could increase with more public information support.

The adoption of UNHSP by hospitals with a high birth rate (≥ 1,000 annual births), located in an urban area is an important starting point. As a matter of fact, the data collected is important for further epidemiological studies on the extent of the infant hearing loss problems in our country and will supply information for health planners, policy program planning and resource allocation.

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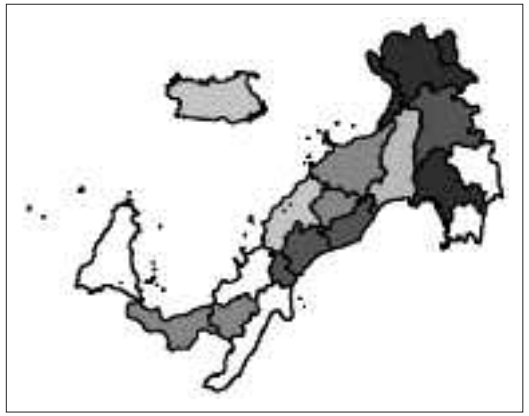
Tab. I.

NHSP details	n	Total	%	North West	%	East North	%	Centre	%	South	%	Islands	%
Maternity wards adopting NHSP	145	618	23.5	75	61.9	30	35.2	16	14.4	18	9.2	6	5.6
Total births screened in 2003	156.048	532.221	29.3	85.291	62.2	33.315	36.6	16.927	17.3	16.795	12	3.720	5.6
Screening protocols	**Total**	**%**	**North West**	**%**	**East North**	**%**	**Centre**	**%**	**South**	**%**	**Islands**	**%**	
TEOAE only (2 stage)	68	46.8	39	57.3	10	14.7	13	19.1	4	5.8	2	2.9	
TEOAE/ABR	75	51.7	35	28.9	19	22.4	3	2.7	14	7.2	4	3.7	
AABR only	2	1.3	1		1								
Hospitals details	**Total**	**%**											
Urban Hospitals NHSP (=> 50,000)	102	70.3											
Rural Hospitals NHSP =< 50,000 In habitans	43	29.6											
Hospitals => 1,000 annual births	105	72.4											
Hospitals < 1,000 annual births	40	27.5											

Tab. II. Geographical distribution of Italian maternity wards employing UNHSP.

Liguria	100.0
Valle D'Aosta	100.0
Piemonte	88.2
Lombardia	42.5
Molise	40.0
Marche	31.3
Abruzzo	20.0
Toscana	18.9
Basilicata	18.2
Calabria	14.7
Umbria	9.1
Sardegna	7.7
Emilia Romagna	6.7
Lazio	6.4
Puglia	5.4
Sicilia	4.9
Campania	3.4
Friuli Venezia Giulia	0.0
Trentino	0.0
Veneto	80.0



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