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Screening for neuroblastoma – biological characteristics of the tumours

Mass screening of 6 month old children for neuroblastoma using urinary catecholamine analyses was started in Japan in 1985. The tumours detected appeared to have a good prognosis and overall mortality from the disease did not fall (see Archivist 1991; 66: 1007). A recent paper (Sachiyo Suita and colleagues, *Journal of Pediatric Surgery* 1994; 29: 599-603) gives more information about these tumours.

Between 1985 and 1990 in the Kyushu area of Japan there were 199 newly diagnosed cases of neuroblastoma. Ninety four of these had advanced disease (stages III and IV) and are the subject of this paper. Of these 94, 18 had been detected through the screening programme and 76 presented clinically.

The tumours detected by mass screening and those detected clinically differed considerably in their biological characteristics. Thus the following favourable features were found in the mass screening group: no N-myc oncogene amplification (14 of 18), favourable histological classification (10 of 10), aneuploid nuclear DNA content (three of three), and S-100 protein positive (three of three). In the non-mass screening group the findings were: no N-myc oncogene amplification (30 of 45), favourable histology (four of 15), aneuploid nuclear DNA content (three of 10), and S-100 protein positive (11 of 21).

Treatment in the mass screening group was variable but generally less aggressive than in the patients who presented clinically. Nevertheless, there were no deaths in the first group but fewer than a quarter of the second group survived for four years.

There seems no doubt, therefore, that the tumours detected by screening are different and carry a much better prognosis. Whether they would regress without treatment is still uncertain. The authors suggest a treatment approach to these tumours including less aggressive chemotherapy. They do not appear to consider the possibility of abandoning the screening programme. Whether repeated or later screening would be more beneficial is not known.

ARCHIVIST