Neurological comorbidity in children with neurofibromatosis type 1.

Hirabaru K, Matsuo M.

doi: 10.1111/ped.13388. [Epub ahead of print]

Abstract

OBJECTIVE:
To determine the frequency of central nervous system comorbidities in children with neurofibromatosis type 1 (NF1).

METHODS:
We performed a nationwide survey to investigate neurological comorbidities in 3-15-year-old children with NF1 in Japan by sending questionnaires to pediatricians and pediatric neurologists. A secondary questionnaire was sent to the parents of identified NF1 patients to assess neurological comorbidities including headache, attention deficit hyperactivity disorder (ADHD)-Rating Scale (RS), and the Social Responsiveness Scale 2.

RESULTS:
The primary survey identified 760 NF1 patients, and the parents of 565 patients were sent the secondary questionnaire. The parental response rate was 25.7% (145; 63 girls, 81 boys, one unspecified). Among the patients, 42.9% (55/128; 35 girls, 20 boys) were reported to exhibit intellectual problems. The ADHD-RS revealed that 40.2% (47/117) of NF1 patients aged 6-15 exhibited ADHD (RS score >93rd percentile), with a rate of 47.7% in boys and 30.8% in girls. Furthermore, 20.2% of patients were suspected of having autism spectrum disorder (29/143; 10 girls, 19 boys), determined by a Social Responsiveness Scale score ≥76. Headache was reported by 49.6% (61/123) of children over 5 years old, and 25.2% (31/123; 10 girls, 21 boys) reported migraine. Other neurological comorbidities included 20 cases of epilepsy (13.8%), 11 cases of optic nerve glioma (7.6%), five cases of brain tumor (3.4%), six cases of cerebrovascular disease (4.1%), and two cases of hydrocephalus (1.4%).

CONCLUSION:
Intellectual problems, ADHD, autism spectrum disorder, and migraine are major neurological co-morbidities in NF1. This article is protected by copyright.