

Title: Success rates and acceptability of domiciliary cardiorespiratory studies to screen for obstructive sleep apnoea in children with Down syndrome

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Introduction

The ICSD-3 permits obstructive sleep apnoea (OSA) diagnosis in adults with domiciliary studies. Paediatric diagnosis requires full laboratory polysomnography. This is unrealistic in the UK where laboratory facilities are patchy. A European study reported sensitivity of 90.9% and specificity of 94.1% for home cardiorespiratory OSA diagnosis in children compared to laboratory polysomnography. We report success rates and acceptability of domiciliary OSA screening in children with Down syndrome (DS).

Method

Children with DS aged 6 months to 6th birthday were recruited from three UK centres. OSA was assessed using the SomnoTOUCH device (S-Med) comprising: chest and abdominal RIP, pulse oximetry, nasal pressure flow, body position sensor and actimetry. Parents chose domiciliary or attended cardio-respiratory laboratory studies. Studies were deemed adequate if > 4 hours of data were recorded. Families were contacted 3 months later and asked how easy/difficult they found the domiciliary study and whether they would be happy to repeat the experience.

Results

201 children were recruited of whom 4 did not progress to cardiorespiratory studies. Of the remaining 197 children, 188 (95%) had successful studies. Four families (2%) chose to be admitted directly to the sleep laboratory. Of those opting for domiciliary studies, 151 (77%) were successful at first attempt, 13% on repeat attempts and 16 (8%) were successfully repeated in the laboratory. Of families who had completed home studies, 163 (85%) were contacted. Two thirds reported that the experience was easy or OK and 82% were happy to repeat in the future.

Discussion

For common conditions like DS, in which regular screening for OSA is recommended, UK resources do not match need. The trade-off between full hypopnoea detection with polysomnography and likely improved sleep quality with cardiorespiratory domiciliary studies needs to be balanced. Domiciliary cardiorespiratory studies are a cost-effective option, acceptable to the majority of parents.