The prognosis of cyclical vomiting syndrome

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Abstract

Aims—The medium term prognosis of cyclical vomiting syndrome (CVS) was studied to determine the proportion of affected individuals who had gone on to develop headaches fulfilling the International Headache Society criteria for migraine.

Methods—Twenty-six (76%) of 34 CVS sufferers identified from the authors’ clinical records were traced, and all agreed to participate. Each child was matched to a control, and telephone interviews were conducted using a standardised questionnaire.

Results—Thirteen (50%) of the subjects had continuing CVS and/or migraine headaches while the remainder were currently asymptomatic. The prevalence of past or present migraine headaches in subjects (46%) was significantly higher than in the control population (12%).

Conclusion—Results support the concept that CVS is closely related to migraine.

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Keywords: migraine; cyclical vomiting syndrome; headache

Cyclical vomiting syndrome (CVS), first described by Gee, is a childhood condition with an estimated prevalence of 1.9%.

It is characterised by recurrent, sudden, and self limiting episodes of nausea, vomiting, and lethargy during which the child looks pale, ill, and miserable. Each attack lasts from a few hours to a few days, and there is complete resolution of symptoms between attacks.

The aetiology of the condition is uncertain. It has been linked to epilepsy, psychological problems, metabolic disorders, and autonomic dysfunction but in the great majority of children no abnormality is found. Many authors consider that CVS is a “migraine equivalent”. In a previous study, we found a similar pattern of associated symptoms in children with CVS and those with abdominal migraine, also considered a migraine equivalent. We have also noted relations between CVS and migraine in an epidemiological study; in particular, children with CVS have an excess of migraineurs among their first degree relatives.

Also supportive of a relation to migraine is the response of CVS to antimigraine drugs. It may respond to pizotifen, a serotonin antagonist, to propanolol, and to cyproheptadine, an antihistamine with serotonin antagonist and calcium blocking properties, all of which are used in the prophylaxis of migraine. A positive response has also been noted in a case treated with sumatriptan, a 5-HT₃ agonist used in the acute management of migraine.

Further support for a relation between CVS and migraine comes from electrophysiological studies. Quantitative electroencephalogram (EEG) changes in CVS are similar to patterns recorded in migraine.

Table 2 Questions relating to cyclic vomiting attacks

At least three episodes in the past year, in an otherwise apparently healthy child, of unexplained nausea and vomiting that were:

- sudden in onset
- self limiting
- accompanied by pallor, lethargy, and misery
- not associated with gastrointestinal or systemic symptoms between attacks

Table 1 Criteria for the diagnosis of cyclic vomiting

At least three episodes in the past year, in an otherwise apparently healthy child, of unexplained nausea and vomiting that were:

- sudden in onset
- self limiting
- accompanied by pallor, lethargy, and misery
- not associated with gastrointestinal or systemic symptoms between attacks

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<table>
<thead>
<tr>
<th></th>
<th>Total (n = 26)</th>
<th>Boys (n = 11)</th>
<th>Girls (n = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subjects</strong> n (% total; 95%CI)</td>
<td><strong>Controls</strong> n (% total; 95%CI)</td>
<td><strong>Subjects</strong> n (%)</td>
<td><strong>Controls</strong> n (%)</td>
</tr>
<tr>
<td>No current CVS</td>
<td>18 (69; 48.2 to 85.7) 25 (96; 80.4 to 99.9)</td>
<td>10 (91) 11 (100)</td>
<td>8 (53) 14 (93)</td>
</tr>
<tr>
<td>Current migraine headache</td>
<td>8 (31; 14.3 to 51.8) 23 (88; 69.8 to 97.6)</td>
<td>4 (36) 10 (91)</td>
<td>4 (27) 13 (66.7)</td>
</tr>
<tr>
<td>No current migraine headache</td>
<td>6 (25; 9.0 to 43.6) 0 (0; 0 to 13.2)</td>
<td>1 (11) 0 (0)</td>
<td>5 (33) 0 (0)</td>
</tr>
<tr>
<td>Current migraine headache</td>
<td>2 (8; 0.1 to 25.1) 1 (4; 0.1 to 19.6)</td>
<td>0 (0) 0 (0)</td>
<td>2 (13) 1 (7)</td>
</tr>
<tr>
<td>Total migraine headache, part or present</td>
<td>12 (46; 26.6 to 66.6) 3 (12; 2.5 to 30.2)</td>
<td>6 (55) 1 (9)</td>
<td>6 (40) 2 (13)</td>
</tr>
</tbody>
</table>

**Table 3** The prognosis of cyclic vomiting syndrome

In addition to questioning the child, one parent, usually the mother, was consulted to confirm the accuracy of the information.

**Statistical Analysis**

The proportions of symptomatic subjects were compared using the $\chi^2$ test.

**Results**

**Telephone Interviews**

Of the 34 children fulfilling our criteria for CVS, current addresses were available for 26 (76%). These comprised 15 females and 11 males, and all agreed to participate in the study. The mean age of respondents was 17 years. There were no significant age or sex differences between those who could and could not be traced.

**Prognosis of CVS**

Table 3 presents the results. Of the CVS subjects, eight (31%) were still experiencing vomiting attacks. Twelve (46%) had a current or previous history of headaches that fulfilled the International Headache Society criteria for migraine, compared to only three (12%) of the controls, a difference that was statistically significant (using Fisher’s exact test, two tailed, $p = 0.0128$).

**Discussion**

This investigation is the first case control study to follow up a population of children previously diagnosed with CVS. There is no laboratory test to confirm the diagnosis of CVS, but we have found our clinical criteria easy to apply in both clinical and epidemiological settings. Although confusion might arise in psychological disorders such as anorexia nervosa and bulimia, in metabolic disorders such as urea cycle disorders, organic acidurias, and mitochondrial myopathy, encephalopathy with lactate acidosis and stroke (MELAS), raised intracranial pressure, and infections, especially of the urinary tract, there are usually other clues to these disorders.

We chose to approach our patients for telephone rather than personal interview because our hospital service covers a wide geographic area, and clinical interviews in the hospital were unlikely to find favour with families living at a distance. In addition, commitments at school, college, and work make attendance schoolatical for this age group. The diagnosis of migraine is based on symptoms, and there are no diagnostic clinical or laboratory findings, so that clinical examina-

10. Forbes D, Withers G, Silburn S, McInerney R. Psychological and social characteristics and precipitants of vomiting in
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Helping disaster victims


He points to five “myths”: that dead bodies are a major health hazard; that immediate outside help is always needed and helpful; that people behave badly after disasters; that the local population is usually too shocked to help itself; and that things soon get back to normal. The reality, he insists, is that dead bodies do not cause epidemics and the belief that they do leads to hasty, unceremonious, and unseemly disposal of the dead. Foreign teams of experts may have a false idea of local needs, they are not always needed urgently, and when they do arrive they should cooperate more with local workers. Most people respond well to catastrophe, and lawlessness and corruption are the exception rather than the rule. Similarly, far from being too shocked, local people are usually enthusiastic and dedicated volunteers. The effects of disaster are long lasting but international interest and attention are short lived and help may dry up. Early donations are often plentiful but may include inappropriate goods when money would be better.

The World Bank recently announced that, in future, 15% of its emergency relief grants will go towards reducing vulnerability to disasters and Dr de Ville de Goyet commends this approach to others.

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