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Continued

SF 36 Scale	Control		MIGRAINE		p
	N	%	N	%	
Vitality					
000-060	2	5.6	13	43.3	13.29 <0.001
061-100	34	94.4	17	56.7	
Social Aspects					
000-060	1	2.8	11	36.7	12.63 <0.001
061-100	35	97.2	19	63.3	
Emotional Aspects					
000-060	4	11.1	13	43.3	8.88 0.003
061-100	32	88.9	17	56.7	
Mental Health					
000-060	1	2.8	13	43.3	16.10 <0.001
061-100	35	97.2	17	56.7	

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Burden of Headache in Children and Adolescents – Developing a Questionnaire for a Global Study

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Objectives: To develop a questionnaire for a global estimation of the burden of headache in children and adolescents, to assess its feasibility, to validate the diagnostic questions and to present preliminary data on quality of life (QoL).

Background: Burden of headache has been assessed in adults worldwide, but data in children and adolescents are sparse.

Methods: We developed a structured questionnaire for mediated-group self-administration by pupils in school, including demographic enquiry, questions on headache prevalence, 12 questions required for diagnosing migraine, tension-type headache (TTH) and probable medication-overuse headache according to ICHD-II, 13 questions on impact of headache and 12 on QoL. In a pilot study, we offered the questionnaire to pupils aged 11-17 years in Vienna and Istanbul and performed face-to-face interviews in randomly selected pupils in Vienna.

Results: We analyzed 711 completed questionnaires: 362 from Vienna and 349 from Istanbul (51% girls; mean age 13.7±1.5 yr). Participation rate was 75% in Istanbul, 65% in Vienna. The lifetime prevalence of headache was 96.5%; 1-year prevalence was 89.4%. Occurrence of headache and use of headache medication on all or most days were reported by 14.5% and 13.2%. Headache lasted hours to all day in 52% and was moderate in 40.2%, severe in 8.5%. Nausea, vomiting, photophobia and phonophobia were reported by 25.8%, 9.8%, 44.8% and 82.3%. Agreement between the questionnaire and 52 face-to-face interviews was <50% for headache on all or most days, frequent use of headache medication and quality of headache. Mean agreement for other diagnostic questions was 78.1% (range 70.6-100%). Excluding subjects with headache on all or most days, 47.8% had migraine (definite or probable) and 52.2% had TTH (definite or probable). Regarding impact of headache, 84% were unable to concentrate, 49% could not do things they wanted to, 42% were sad and 24% missed school because of headache on ≥1 day in the previous month. Regarding QoL, overall, 86% felt tired, 72% felt ill and 35% felt alone. Increasing headache duration, severity and number of fulfilled ICHD-II migraine criteria correlated with increasing impact of headache in most impact questions, and with decreasing QoL in 7, 4, and 10 respectively of the 12 QoL questions.

Conclusions: This pilot study revealed a marked selection bias towards subjects with headache. To the questionnaire, pupils over-reported headache and medication use on all or most days. Otherwise there was fair agreement between questionnaire and interview in the diagnostic questions. As a consequence of this pilot study the questionnaire will be adapted and re-evaluated. Meanwhile, these preliminary findings on impact of headache and QoL suggest considerable burden of headache.

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The Wocach Project. A Innovative Web-Based System for the Study of Headache in Children and Adolescents. A Preliminary Study of Methodological Issues

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Objectives: Our aim is to take account of the methodological opportunities offered by a web-based model for the study of epidemiology features of headache in a large population of children and adolescents from multiple countries

all over the world, taking into account the co-occurring comorbid conditions and the correlations with disability.

Background: In children and adolescents, headache is one of the most common pain experiences (Ghandour *et al.*, 2004) that has a high risk of development of physical and psychiatric morbidities and to persist into adulthood as a chronic condition. In adolescents, headache is one of the most common health problems, with a range of 5 to 25% of children and adolescents reporting severe or frequent headache (Anttila 2006). Perquin *et al.*, (2000) found that 4.6% of 12-16 year old adolescents suffer from chronic headache. In addition, headaches have been shown comorbid with a range of physical and mental health problems including asthma (Lateef *et al.*, 2009), allergies (Lateef *et al.*, 2009), sleep disorders (Miller *et al.*, 2003), suicidal ideation (Wang *et al.*, 2009), emotional and behavioral problems (Strine *et al.*, 2006), anxiety and depression (Guidetti *et al.*, 1998).

Methods: The research is organised in a pyramidal way, in different geographical areas of the world.

Tests adopted will refer to the following comorbidities: Psychiatry-related; ADHD field; Epilepsy categories; Sleep disorders; Atopic disorders; Other areas investigated: Cognitive; Quality of life.

Data retrieval, with specific attention to security and encrypting, will be managed by "Sapienza" University of Rome. An Electronic Patient Record has been implemented with automatic protocols for data analysis.

Statistical models adopted:

- 1) Starting of the study: analysis of comorbidities; identification of differences between groups (area, age, sex, etc);
- 2) After 1 year: the same analysis of step 1 will be repeated to control for time variable (maturation, stability of phenomena observed);
- 3) Regression analysis and factorial analysis with data recorded for the identification of factor as predictive of selected pathologies;
- 4) Analysis of the different clinical approaches adopted; compared with results of steps 1-3 for the identification of the different power of therapeutic approaches adopted.

Results: By now, we are collecting data coming from 70 universities and clinical centers all over the world.

Conclusions: The web-based system, allowing the participants to follow on-line the developing of the data analysis process, could be a base for the creation of guidelines for deeper knowledge in headache, comorbidity and predictive factors.

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Metabolic and Imaging Abnormalities in the Evaluation of Children with Cyclic Vomiting Syndrome

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Objectives: To determine the need for imaging in patients with CVS. To evaluate the role of metabolic testing in this disorder.

Background: Cyclic vomiting syndrome (CVS) is a diagnosis made by exclusion of other organic diseases. It is considered a migraine variant. It has been suggested that patients with CVS may have mitochondrial dysfunction. The aim of the study was to evaluate our CVS patients to determine whether they had associated, undiagnosed metabolic abnormalities.

Methods: The study included 106 consecutive patients less than 21 years of age at diagnosis. Information regarding medical history, laboratory and imaging studies was collected. Metabolic studies in serum and urine were obtained when patients were well and when patients were in a vomiting cycle, which included serum amino acids, urine organic acids, and acylcarnitine profile.

Results: The mean age at diagnosis was 8.9 ± 5.0 years. The patient population was 57% male and 77% Caucasian. Patients reported cycles with median duration of 24 hours, 18 vomiting episodes per cycle and a peak of 5 emeses per hour at 4-week intervals. Most patients (88%) reported complete symptom resolution between episodes. 10% of episodes required IV fluids. Warning symptoms occurred in 63%, typically abdominal pain and nausea (37%). Episode triggers were identified in 66%, intercurrent illness (35%) seen most often, motion sickness in 16%. Autonomic symptoms were seen in 25%, with fever (13 patients) and hypertension (9 patients). For prophylactic treatment, amitriptyline was effective in 23 of 40 patients (58%) and cyproheptadine was effective in 30 of 61 (49%). High dose oral ondansetron improved or resolved acute symptoms in 56 of 85 (66%). There was a family history of migraines in 71% of patients, epilepsy in 10%. Personal migraine history was noted in 26%. Neuroimaging showed previously unknown intra-cranial abnormalities in less than 10% of patients, none