Headache Diagnosis in Primary Care

Leone Ridsdale[1*], Andrew Dowson[2], Lucy V. Clark[3], Laura H. Goldstein[4], Barry Marsh[5], Myfanwy Morgan[6], Paul McCrone[7], and Paul T. Seed[8]

[1]*Kings College London, Department of Clinical Neurosciences, Institute of Psychiatry, PO Box 57, Denmark Hill Campus, London, England, UK*
[2]*Director of the Headache Service, King's College Hospital, Denmark Hill, London SE5 9RS UK*
[3]*Wolfson Institute of Preventive Medicine, Barts and The London School of Medicine and Dentistry, Charterhouse Square, London, UK*
[4]*Institute of Psychiatry, Box P077, De Crespigny Park, London, UK*
[5]*Family Practitioner & Practitioner with Special Interest in Headache, Albion Street Health Centre, London, UK*
[6]*Department of Primary Care & Public Health Sciences, Kings College London, UK*
[7]*Professor of Health Economics, Box P024, De Crespigny Park, London, UK*
[8]*Division of Women's Health, King's College London, St Thomas' Hospital, London, UK*

Abstract

Introduction: Doctors in primary care are responsible for diagnosing and managing patients with headache, but frequently lack confidence in doing so. We aimed to compare Family Practitioners' (FPs) diagnosis of headaches to classification based on a symptom questionnaire, and to describe how classification links to other important clinical features.

Methods: This was an observational study of patients attending primary care doctors for headache.

Main outcome measures: Patients completed a questionnaire including the Headache Impact Test, the Migraine Disability Assessment Score, the Hospital Anxiety and Depression Scale, the Illness Perceptions Questionnaire, a satisfaction scale, a service use inventory and a symptom questionnaire rated by two Practitioners with Special Interest (PSIs) in Headache.

Results: 255 patients completed questionnaires. There was low agreement between FP diagnosis and classification using the symptom questionnaire. FPs frequently did not use the diagnosis migraine, when patient reported symptoms which justified this. FPs did not classify patients with ≥ 15 days of headache separately as chronic daily headache (CDH), and this could be because the classification system used does not have that code. Patients classified as CDH using the symptom questionnaire reported more disability, more symptoms of anxiety and depression (HADS), more service use, and less satisfaction with FP care.

Conclusion: Patients, who present with headache in primary care, tend to receive non-specific diagnoses. Having a system that would allow separate classification of people with headache of ≥ 15 days a month might help FPs to explore and address associated features with patients in terms of disability, psychological co-morbidity and cost, and improve satisfaction with care.

Keywords: Diagnosis; Primary care; Headache; Migraine; Chronic daily headache

Key Points of the Article

1. Family Practitioners (FPs) diagnose and manage 97% of patients consulting for headache without referral to specialists, but lack confidence in their diagnosis. We found FPs underuse the diagnosis, migraine.

2. FP's also do not identify frequent headache (≥ 15 days per month) separately, and this may partially be due to limitations of the current coding system that they are using.

3. Patients with frequent headache (≥ 15 days per month) report significantly more disability, more symptoms of anxiety and depression, and less satisfaction with FP care. Criteria-based diagnosis may help doctors manage headache, and improve outcomes.

Introduction

Headache is common and 4% of adults consult their family practitioner (FP) for headache each year, with 97% managed entirely in primary care [1]. Doctors frequently express lack of confidence in diagnosing neurological conditions, which may partially be due to lack of appropriate clinical teaching [2]. We described the characteristics of patients with headache consulting FPs, and found nearly 30% had case-levels of anxiety [3]. Reasons FPs gave for referring to neurologists included the patient's anxiety about brain tumor, and the FP's lack of confidence in diagnosis [4]. We previously estimated UK service costs for people consulting with headache are £956 million and the total costs including lost production are £4.8 billion [5].

Guidelines on headache classification are disputed and have changed over time [6,7]. It is not clear how classification systems designed by neurologists and academic researchers can contribute to clinicians working in primary care. Comparison of FP diagnosis with expert classification has suggested under-diagnosis of migraine and under-use of migraine-specific management [8,9]. Common headache types seen by FPs are migraine with and without aura, episodic tension-type headache (TTH), and chronic daily headache (CDH = headache lasting on average for ≥ 4 hours on ≥ 15 days per month). Secondary (sinister) headaches and cluster headache are rare. A major strength of UK primary care has been the computerization of patient records using the Read-code system, which has more than 30 codes for the common headache and migraine diagnoses. However, Read-codes were not designed to mirror or adapt to emerging criteria produced by specialists and researchers, such as the International Headache Society (IHS) classification of headache and migraine.

We aimed to describe the diagnoses made by FPs using Read-code data (http://www.connectingforhealth.nhs.uk/systemsandservices/data/uktc/readcodes), and compare them to a classification applied on the basis of symptoms reported by patients in a questionnaire, which was rated independently by two Practitioners with Special Interest (PSI) in headache. We aimed also to describe the extent to which PSIs' classifications were associated with other characteristics of headache consulters which may be important in management, including headache impact, disability, psychological state, service and lost-productivity costs and satisfaction with care.

Patients and Methods

Practices and patients

Eighteen family practices, with 150 family practitioners (FPs)

participated in the study. Practices were located in the South East region of the UK. The number of patients in the registered population aged 18–75 years was approximately 141,000. Eligible patients were those consulting for headache as a main or important problem. Study methods have been described in full elsewhere [3].

Study Design

To recruit patients, a designated person in each family practice identified each patient as they consulted for headache, classified according to pre-defined Read-codes. All 23 Read-codes including the word 'headache' were included in the search as well as all 11 including the word 'migraine', except for 115E = 'no history of migraine' unless it was accompanied by another headache Read-code. Patients identified as having consulted for headaches from the Read-code used by the FP during the consultation were invited to re-attend their practice to complete a questionnaire.

Criteria-Based Classification

Criteria were developed for this study based upon the IHS I (1998) guidelines [6]; with additional items from the Silberstein-Lipton criteria [10]. All patients completed a symptom questionnaire at their assessment, and patients could report up to three different headaches. Two PSIs independently rated questionnaire responses, allocating patients to classification groups depending on their headache symptoms, and assigning an overall classification where more than one headache was reported. The PSIs were blind to the Read-code recorded by the patient's FP. Using this method, patients were classified as having migraine with and without aura, headache on ≥ 15 days a month classified as chronic daily headache (CDH) with and without analgesic dependence, and 'other' headaches. The two PSI met to discuss their decisions when ratings differed. A migraine classification required two or more out of four of the following symptoms:- one sided, throbbing, worse with exertion, moderate of severe, plus one or more of nausea, photophobia, and phonophobia.

Measures of Patients' Characteristics

Patients' clinical characteristics were assessed using a self-report booklet of validated questionnaires including the Headache Impact Test (HIT-6), a valid and reliable six-item questionnaire designed to assess the impact headaches have on ability to function in the previous month [11], and the Migraine Disability Assessment Score (MIDAS), a valid and reliable five-item questionnaire requiring responses to five questions about disability associated with headache in the previous 3 months [12]. Anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS), a valid and reliable 14-item self-report scale which has been widely used in community samples [13]. Patients were asked to report which of a list of 26 symptoms they experienced and considered to be connected with their headaches, which is part of the Illness Perceptions Questionnaire (IPQ-R) [14]. Patient satisfaction with treatment provided by their family practice was measured using one item from a reliable questionnaire developed for use in primary care [15]. Patients were asked to agree if they were satisfied and the 5-point Likert scale was anchored at 1 = strongly disagree and 5 = strongly agree. This scale was then dichotomised to disagree (1-3) and agree (4-5). Research associates collected information on the FPs' diagnosis and consultation frequency in the previous 3 months.

The services included were: contacts with FPs, neurologists, other medical specialists, contacts with other professionals (including complementary healthcare), scans undertaken (MRIs and CTs), and prescribed medication. For scans and FP contacts we asked about the number of times these had been received for headache and how many for other reasons. Unit costs were attached to the information on service use using nationally applicable figures [16]. The economic cost of lost work time was calculated by multiplying the lost days by the earnings that patients in the sample received (calculated as a daily figure). Not all patients stated their earnings and in these cases we obtained average figures for their job type and gender from official data [17].

Data analysis

Data were analyzed using SPSS version 8. Data were analyzed using non-parametric tests for categorical variables, and with t-tests for continuous data where differences were compared between diagnostic groups. Statistical methods are described in details elsewhere [18].

Results

Of 489 patients, 255 (52%) agreed to take part and provided data on their headaches.

FPs' diagnosis from Read-codes

Of the 34 Read-codes available, nine were used by the FPs in this study, and we combined these codes, so that only the stem diagnosis was used. Of 255 patients, FPs classified 80 (31%) patients as having migraine (FP-migraine) and 144 (57%) as headache (FP-other headache), 23 (9%) tension headache, and for the remaining 8 (3%), headache was not classifiable.

PSIs' criteria-based classification

Using the criteria-based classification, 163/255 patients (63.9%) reported experiencing a single type of headache, and 92 patients (36.1%) experienced two or three different types of headaches. Ten patients (4%) did not provide enough information for a classification. Where there was more than one type of headache reported, the higher category in terms of severity was applied. Using this strategy 152 (60%) patients were classified as migraine, 78 (31%) were classified as CDH, and the remaining 15 (6%) were classified in less common diagnostic groups, and subsequently excluded from further analysis.

FP Read-code diagnosis compared to PSI criteria-based classification

Table 1 show that for migraine, there was agreement between the FPs' diagnosis and the PSI criteria-based classification in 55 cases (37% of 147 classified as migraine by PSIs). A further 92 (63%) cases which were classified as migraine using the criteria, were diagnosed as other types of headache by FPs (84 other headache and eight tension headache). FPs did not have a code with which to identify people with headaches on ≥ 15 days per month (CDH), and classified 45/76 (59%) as headache, and 17/76 (22%) patients as having migraine.

Association of criteria-based classification with other patient characteristics

Table 2 compares the criteria-based classification of patients with migraine and CDH (≥ 15 days month). Compared to migraine, the CDH group had significantly more headache-related disability, significantly higher scores for anxiety and depression, and were more likely to be dissatisfied with the treatment received from their FP. Compared to migraine, the group with CDH had significantly higher service costs (migraine £115 (sd £156), CDH £164 (sd £194), bootstrapped 95% CI of difference £4 to £97). Compared to migraine, the group with CDH had significantly higher total costs (migraine £475 (sd £1007), CDH £797 (sd £1438), bootstrapped 95% CI of difference £6 to £680).

Classification by PSI (n)	Read-code classification given by FP (n)				
	FP-migraine	FP other headache	Tension headache	Unclassifiable	TOTAL
Migraine	55	84	8	5	152
CDH	17	45	14	2	78
Other headaches	3	10	1	1	15
Unclassified	5	5	0	0	10
TOTAL	80	144	23	8	237

Table 1: Comparison between FPs' diagnosis and criteria-based classification.

	Specialist diagnosis		
	CDH n = 78	Migraine n = 152	Mean difference (CI) & P-value	
Headache disability (MIDAS)	32.3 (34.3)	18.5 (26.4)	13.7 (5.6 to 21.9)	0.001
Number of headaches in previous 3 months	55.0 (29.0)	16.0 (18.1)	38.9 (32.5 to 45.4)	<0.001
Severity of pain (1-10)	6.3 (2.2)	7.0 (2.3)	-0.8 (-1.4 to -0.2)	0.015
Headache impact (HIT-6)	62.1 (7.0)	61.6 (7.4)	0.5 (-1.6 to 2.6)	0.65
Anxiety (HADS) (0-21)*	8.5 (4.8)	7.2 (4.2)	1.3 (0.02 to 2.5)	0.047
Depression (HADS) (0-21)*	5.8 (4.1)	4.0 (3.4)	1.8 (0.7 to 2.8)	0.001
Number of headache-related symptoms	7.7 (4.9)	7.0 (4.9)	0.7 (-0.7 to 2.1)	0.34
Number of visits to FP in previous 3 months	1.6 (1.3)	1.8 (1.9)	-0.2 (-0.6 to 0.3)	0.52
Satisfied with treatment from FP	41 (54%)	97 (68%)	-14% (-28 to -1)	0.04
Number of cases of anxiety	27 (37%)	34 (23%)	14% (0.5 to 27)	0.04
Number of cases of depression	9 (12%)	8 (6%)	6% (-2 to 14)	0.09

Table 2: Patients' characteristics using criteria-based classification.

Discussion

Summary Of Main Findings

Compared to PSI's, FPs appear to under diagnose migraine. As there were no codes for Chronic Daily Headache (CDH), FPs could not classify headaches in the same way as the PSI. Comparison between patients with migraine and CDH, showed that the group with CDH, reported more disability, more symptoms of anxiety and depression, higher costs and lower satisfaction with care.

Strengths and the limitations of this study

The study has compared a diagnosis recorded by a FP (with the patient present but with the limitations of time and the coding scheme), with classification made by practitioners with extra training and experiences (PSIs) who had access to and used responses to a symptom questionnaire. PSI having access and scoring a symptom questionnaire is clearly a different process from the clinical consultation, which can take account of other features, including FP not having special training, having limited time, and working with a coding scheme which is not designed to be consistent with criteria produced by specialists for academic research. It is possible that FPs gave their patients the optimal treatment irrespective of the Read-code used, assessing this was not the purpose of the study. However, interviews with a sample of the FPs in this study found that lack of clinician confidence and patient pressure were factors which influenced FPs in deciding to refer patients to specialists [4].

Relationship to other studies

In another family practice study, Weindels et al. [18] found that compared to patients with less frequent headache episodes, a group with frequent headaches (≥ 15 days per month) were significantly more likely to have somatic problems, like gastroenterological and musculoskeletal disorders, as well as more psychiatric disorders and medication over-use [19]. Both frequent headache and co-morbidity were associated with lower quality of life [19]. Compared to hospital specialists, FPs potentially have more information about patients' other conditions and their management as a whole. However current diagnostic classification using the Read coding system does not make necessarily alert FPs to linking headache diagnosis with this other clinical information. In this context it is possible that psychological co-morbidity is under-diagnosed or not connected. Prescription of pain medication for headache and co-morbid conditions may contribute to a vicious cycle, with headache and pain symptoms becoming frequent and chronic. Our evidence may increase FPs awareness of frequent headache, and its co-morbidity, and stimulate FPs to identify and manage the co-morbidities of these patients more precisely.

Implications for clinical practice and research

Our results suggest that FPs underuse migraine as a diagnosis. Previous findings suggest that when patients describe a few episodes of headache, they may not include symptoms like unilateral, pulsating pain, or think they have tension headache, and their doctors may not diagnose migraine [12]. Symptom diaries and questionnaires produce a longitudinal picture. FPs does not have a Read-code for CDH, and have more problems managing patients with CDH, because of associated co-morbidity. When we previously analyzed and reported the quantitative data, in which this qualitative study was nested, we found a third of patients presenting in family practice were classified as chronic [3]. However when one of us described referrals to a headache clinic, two-thirds had CDH [20]. It is possible that failure to identify and address the disability, psychological morbidity and cost which can be associated with CDH may lead to dissatisfaction among some patients, who then apply pressure for referral to specialists. The read codes need a revision to include CDH because not having this code available limits the FP physicians ability to properly classify patients. If FPs are able to distinguish low from high frequency headache, this may help them to identify and manage the associated disability, psychological co-morbidity and cost associated with headache. Addressing these issues in primary care may have health gains for patients, enhance patient satisfaction, reduce referral, and reduce costs for patients and society [5]. This remains to be evaluated.

Acknowledgements

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Corresponding author: Leone Ridsdale, Kings College London, Department of Clinical Neurosciences, Institute of Psychiatry, PO Box 57, Denmark Hill Campus, London, England, SE5 8AF, Uk, Tel: +44-20-7848-5187; E-mail: leone.ridsdale@kcl.ac.uk

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