Quality improvement

Primary care in the management of common orthopaedic problems

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ABSTRACT

Background Improving national healthcare services through the enhancement of primary care, is a major challenge in many countries.

Aim To assess the prevalence of those orthopaedic cases that could be managed by a primary healthcare system.

Method Between January 2001 and January 2006 a total of 39 172 patients attended the orthopaedic emergency department (ED) of Laikon University Hospital. All cases were included in this retrospective study. The registry of the orthopaedic ED was analysed by age, sex and clinical diagnosis. All patients were evaluated by a specialist. Classification of the cases was based on the main symptom of those seeking care.

Results A total of 39 172 patients visited the orthopaedic ED; 17 040 (43.5%) of these patients were stratified in six major groups of diagnosis. Back pain (17.1%) was the most common reason for seeking care in the orthopaedic ED, followed by ankle injuries (10.3%). The admission rate was 1.2%, and X-ray examination was necessary for 93.4% (15 220) of patients.
Introduction

Improving quality, care and performance of health services, is an important challenge in many countries of Europe. Over the past few years, Greece has made several attempts towards improving the national healthcare services and fulfilling the patients’ major needs. According to recently conducted studies, patients’ main demands are shorter waiting times and personal continuity of care.\(^1\)-\(^3\)

Despite the fact that a Health Care Reform Act enhancing primary care was passed a few years ago,\(^4\) primary care founded on a long-term doctor–patient relationship, which is fundamental for a functional healthcare system,\(^5\)-\(^6\) does not actually exist especially in urban areas of Greece.

Musculoskeletal conditions are a major concern for chronic disability; different specialties are involved in managing these patients, and thus waiting times are often long.\(^7\) It is thought that specific training of general practitioners (GPs) combined with information to better link with orthopaedic departments will facilitate a better management of orthopaedic problems in the primary care setting.

We therefore conducted a study for a six-year period, in the orthopaedic emergency department of Laikon University Hospital in order to evaluate the cases treated and to explore the role that primary care could have in the initial treatment of these patients.

Method

All patients who attended the orthopaedic emergency department of Laiko University Hospital during on-call days, between January 2001 and January 2006, were included in this retrospective study. From the registry of the orthopaedic emergency department, data related to medical history, clinical examination and basic laboratory investigations were recorded. Sex, age, region, most common orthopaedic disorders and their frequency as well as their main cause according to age, were recorded. Each case was reviewed with respect to the necessity for hospital attendance rather than GP attendance. This assessment was made on the basis of experience in the research team working in both general practice and a hospital accident department; although subjective, it was not difficult to judge whether a given clinical problem would have warranted hospital attention. The clinical diagnosis used for the classification of the cases was based on the main symptom or clinical sign that constituted the reason for seeking care. No patients suffered from any other severe health problem, and no injuries were part of a spectrum of other trauma.

The total number of patients who visited the orthopaedic emergency department was stratified into six groups, according to the orthopaedic problem they suffered from: (a) ankle joint injury; (b) wrist joint injury; (c) knee joint injury; (d) back pain; (e) neck
pain; and (f) muscle lacerations. These conditions were selected because they were minor orthopaedic problems and the patients suffering from them did not present any other severe co-morbidities. Before being judged appropriate for GP attendance, the patients were evaluated by a specialist as well as by a GP. The investigations and treatments that were administered to the patients were also examined. The total hospitalisation rate (%) was extracted.

The present study conforms to the principles outlined in the Declaration of Helsinki. No ethical approval was necessary for this retrospective study.

Results

The total number of patients, who visited the orthopaedic emergency department, during the on-call days, was 39 172. Among these patients 16 950 (43.5%) suffered from orthopaedic problems that, after a thorough evaluation, were thought to be appropriate for GP attendance; 9713 (57.0%) were males and 7237 (43.0%) females. The most common of these minor orthopaedic problems was back pain and was observed in 2914 patients (17.1%), followed by ankle joint injury (10.3%, 1755 patients). Knee joint injury accounted for 1227 patients (7.2%). Wrist joint injury was detected in 903 patients (5.3%). Neck pain accounted for 1.9% (324 patients), and muscle lacerations were observed in 290 patients (1.7%). The main results as well as the correlation of minor orthopaedic problems with patient age are tabulated in Tables 1 and 2.

The main cause for ankle joint injury, for ages between 14 and 30 years, was sporting activity, whereas for ages over 30 years, injury was caused by daily activities. Labour accidents or a work-related cause were found to be the main reasons for back pain in all ages except for ages 14–20 years (only 4% of all patients), who generally suffered from back pain due to sporting activities. Sports were recorded as the main cause for wrist and knee joint injury as well as for muscle lacerations for patients aged 14–50 years. For patients over 50 years (accounting for 20%, 21% and 13% of each of these orthopaedic problems), these three orthopaedic problems were caused by daily activities.

Hospitalisation rate accounted for 1.2% (204 patients). Implantation of cluster or catch was judged as appropriate treatment for 2590 patients (15.2%), whereas 10 940 patients (64.2%) were treated with anti-inflammatory medicines. X-ray examination was ordered in 15 915 patients (93.4%); for 801 patients (4.7%), further investigation with computed tomography (CT) was necessary. In 443 patients (2.6%), magnetic resonance imaging (MRI) was needed.

<table>
<thead>
<tr>
<th>Orthopaedic condition</th>
<th>Number (%) of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back pain</td>
<td>2914 (17.1)</td>
</tr>
<tr>
<td>Ankle joint injury</td>
<td>1755 (10.3)</td>
</tr>
<tr>
<td>Knee joint injury</td>
<td>1227 (7.2)</td>
</tr>
<tr>
<td>Wrist joint injury</td>
<td>903 (5.3)</td>
</tr>
<tr>
<td>Neck pain</td>
<td>324 (1.9)</td>
</tr>
<tr>
<td>Muscle lacerations</td>
<td>290 (1.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orthopaedic condition</th>
<th>14–20</th>
<th>21–30</th>
<th>31–50</th>
<th>&gt;50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back pain</td>
<td>4</td>
<td>10</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Ankle joint injury</td>
<td>41</td>
<td>32</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Knee joint injury</td>
<td>26</td>
<td>31</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Wrist joint injury</td>
<td>28</td>
<td>31</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Neck pain</td>
<td>9</td>
<td>24</td>
<td>31</td>
<td>36</td>
</tr>
<tr>
<td>Muscle lacerations</td>
<td>36</td>
<td>37</td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>
Discussion

Musculoskeletal conditions are a major cause for chronic disability and one of the commonest reasons for seeking care in some of the largest hospitals in the UK. This situation was also observed in Laikon University Hospital, one of Greece’s largest hospitals. Overall this study suggests that a major proportion of cases arriving in the emergency department (ED) of one of the largest university hospitals of Athens could be successfully managed by a 24-hour-a-day primary healthcare service. Numerous retrospective studies suggest that one- to two-thirds of patients seen in emergency departments suffer from diseases that could have been appropriately managed in general practice. This study highlights the need for the development of a prospective method for identifying patients that could probably be treated by primary care health services.

The identification of patients suffering from non-emergency orthopaedic problems such as lacerations and minor injuries that do not need specialist services may be a cornerstone of reforming the healthcare system. A service based in hospital outpatient departments may be more effective in dealing with patients’ problems because of easy access to investigations such as radiology and proximity to specialists, who can offer advice. In a recent study, GPs with special interests were included as one aspect of a quality improvement project that improved access to musculoskeletal services. International studies show that the strength of a primary healthcare system is that it is associated with improved population outcomes for all-cause mortality. In our study, minor orthopaedic problems accounted for 43.5% (17 040) of all patients with orthopaedic emergencies during on-call days between 2001 and 2006.

Interestingly, we observed that almost all patients (93.4%) who visited the orthopaedic emergency department (ED) needed an X-ray examination. Only 801 (4.7%) patients needed further examination with CT, and 443 (2.6%) with MRI. The appropriate technology and diagnostic equipment as well as the training of GPs in assessment and management is therefore necessary in order to deal effectively with patients who attend the ED with orthopaedic problems. Unfortunately, despite the fact that musculoskeletal problems form a significant proportion of the general practice workload in the UK, accounting for 9.5% of consultations in males attenders and 8.4% of female attenders, the average UK undergraduate training in trauma and orthopaedics is only 5.6 weeks (range 3–12 weeks). Furthermore, only 10.5% of vocational training schemes include orthopaedics. Reportedly, one additional reason for patients seeking hospital attendance is their fear that the health centres may not be appropriately equipped.

Unfortunately, as previous surveys have reported, there is a trend among patients to seek hospital attendance; long waiting lists in orthopaedic clinics have been described as a problem in the National Health Service of many countries. For minor problems like back pain, which is common in patients aged over 50 years, the availability of simple orthopaedic interventions to GPs, as well as better patient management in primary care may reduce hospital referrals. A service provided by GPs may be more accessible to patients and more acceptable to those who prefer a less-intensive clinical setting.

Additional training of GPs that would enable them to treat patients who might otherwise have been referred to a secondary care consultant may help in treatment of these minor problems and therefore reduce long waiting times, which in orthopaedic and outpatient care are often longer than in other specialties.

Common orthopaedic problems such as back pain, neck pain and muscle lacerations could be easily managed in a primary care health service. Moreover, a study by Baker et al suggested that there was no difference regarding clinical outcome between patients attending services in hospital and general practice settings; patients reported that access to treatment was as good in general practice clinics as in hospitals. Taking into account that back and neck pain are more frequently observed in patients aged over 50 years, related to working conditions, and such patients have difficulty with access to hospital settings with long waits, the management of these minor orthopaedic problems in a primary care setting may ameliorate demand in hospital settings.

GPs should improve their skills in managing certain orthopaedic problems and should be involved in developing appropriate referral pathways. The training of GPs in orthopaedics has long been criticised, and several studies have aimed at improving matters by using educational interventions, but with only limited success in the UK. An appropriately organised health centre with well-trained GPs along with a change in public perceptions of appropriate care may provide an opportunity for professional development, quality development and organisational flexibility, which may ultimately overcome the current disadvantages of the health system.

Conclusion

This study demonstrates that many patients attending the orthopaedic emergency department could have been managed in appropriately equipped primary care settings. The role of GPs should be reappraised and strengthened. The organisational development of
general practice should be determined from a professional perspective, as well as according to patient needs and preferences, and thus quality, care and performance of health services will be improved.

REFERENCES


ETHICS

No approval was needed.

PEER REVIEW

Not commissioned; externally peer reviewed.

CONFLICTS OF INTEREST

None.

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Received 9 October 2007
Accepted 30 July 2008