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Health Economic and Quality of Life Considerations in the Management of Pain

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NOTE: Costs have been translated into US$ based on exchange rates quoted in *The Economist* (26 June 2002), except for German marks, where the rate was taken from *The Economist* (22 December 2001): US$1 = £0.66 = SEK9.2 = AU$1.78 = €1.01 = DM2.17 = DFl.2.07.

Abstract

Pain represents a major clinical, social and economic problem, with estimates of its prevalence ranging from 8% to more than 60%, depending on the population. The impact of pain on economies is enormous, with the cost of back pain alone equivalent to more than one-fifth of one country's total health expenditure and 1.5% of its annual gross domestic product, while in another it represents three times the total cost of all types of cancer. However, decision makers have tended to concentrate their attention on one very minor component of the cost burden, namely prescription costs, which, in the case of back pain, represent 1% of the total cost burden.

In addition to its economic impact, chronic pain is probably one of the diseases with the greatest negative impact on quality of life. For example, the quality of life for those with migraine had been shown to be at best equal to that for people with arthritis, asthma, diabetes mellitus or depression.

The burden that pain imposes on individuals and the enormous costs that society has to bear as a result clearly demonstrate the need for collective thinking in the decision-making process. A broad, strategic perspective – based on evidence relating to effectiveness (including tolerability), efficiency and equity – is required in determining issues relating to the provision of services and resource allocation. In this regard, it is clear that paracetamol (acetaminophen) is effective in securing an analgesic effect; it has a good tolerability profile and is relatively cheap, in terms of both drug acquisition costs and its overall cost profile. Pain management strategies based on collective thinking should therefore place great reliance on paracetamol as an initial therapy in maximising pain relief and minimising cost and the impact of adverse effects.

1. Introduction

The aim of this review is to assess the impact of chronic non-cancer pain (i.e persistent or episodic nociceptive pain of a duration or intensity that adversely affects the function or well-being of the patient) on health services, economies and patients' quality of life, and to propose a coherent and joined-up approach to the management of pain. The review will also consider the role of paracetamol within pain management, in the light of evidence relating to its effectiveness and efficiency. The review initially examines estimates

of the prevalence of pain and the impact it has in economic terms and on quality of life. It then explores the factors that need to be considered in order to develop pain management strategies that aim to deliver maximum benefits to patients within the constraints imposed by limited resources.

2. The Economic Impact of Pain

The extent of the chronic pain problem poses a significant economic burden for patients, health services and societies. For example, the direct annual cost of back pain amounted to DM10 billion (US$4.6 billion) in Germany,[1] and the direct cost of rheumatoid arthritis during the first six years of a study in The Netherlands was estimated to be DFl.11 550 per patient (US$5 576).[2] There were more than 60 million prescriptions for analgesics (BNF Category 4.7) in England in 2000, aside from over-the-counter purchases, at a cost of £409 million (US$625.8 million). The vast majority of these were for paracetamol and its combinations (34 million prescriptions at a cost of £88 million [US$134.6 million]) and non-steroidal anti-inflammatory drugs (NSAIDs) (19 million prescriptions at a cost of £176 million [US$269.3 million]).[3] It has been estimated that primary care management of patients with chronic pain accounts for 4.6 million appointments per year in the UK, equivalent to 793 whole-time general practitioners, at a total cost of £69 million (US$105.6 million).[4] However, a significant number of people with chronic pain may not actually consult anyone about their condition, but self-medicate. A conservative estimate of over-the-counter medication relating to back pain amounted to £23.5 million (US$36.0 million).[5]

However, the direct costs of pain management are minor in comparison with the impact on the economy resulting from the consequences of pain. Musculoskeletal problems are one of the major causes of disability across the world. In France, a study of nearly 2 000 professionals suffering with acute pain showed that, for those with musculoskeletal pain (nearly 50%), the average number of days off work per year as a result of their pain was 9.[6] For patients diagnosed with rheumatoid arthritis, it has been estimated that 64% will have to leave the labour market after 8 years.[7] In addition, the impact of pain on lost production is enormous. For example, the indirect cost of back pain in the UK was estimated at £10.7 billion (US$16.4 billion) using the human capital approach and £5 billion (US$7.7 billion) using the friction cost method.[8]

3. Pain and its Impact on Quality of Life

The economic burden associated with pain fails to do justice to the extent of suffering and reduced quality of life experienced by patients. On the basis of the World Health Organisation estimate of 22% prevalence,[9] there would be 1 200 million days of chronic pain per year in the Netherlands, 2 400 million in Canada, 4 700 million in France, 6 600 million in Germany and 21 500 million in the USA. These disorders are associated with relatively poor quality of life. For example, in patients referred to a Danish multidisciplinary pain centre, the severity of the impairment was equal to or greater than that of patients with cardiopulmonary diseases and major depression, their Psychological General Well-being Scale scores were lower than those with hypertension and gastrointestinal problems, and they also displayed high levels of anxiety and depression, as measured by the Hospital Anxiety and Depression Scale;[10] patients with rheumatoid arthritis showed significant decrements in scores on all SF-36 scales in comparison with age- and sex-matched US population norms.[11]

4. Pain Management Strategies

It has been advocated that decisions relating to patient management are made with regard to 'the three Es' – effectiveness, efficiency and equity. [12]

4.1 Effectiveness

In terms of effectiveness, the evidence-base for the effectiveness of interventions and management

strategies in both acute and chronic pain is large and growing, incorporating new therapeutic areas, interventions and programmes. However, the nature and extent of adverse events associated with some interventions have resulted in considerable debate and discussion as to what constitutes effectiveness when efficacy and safety are combined. For example, the use of NSAIDs is associated with a range of upper gastrointestinal side effects, with one in 1 220 patients taking oral NSAIDs for 2 months or more being likely to die as a result of gastrointestinal complications.[13] Combining the evidence on efficacy and safety makes it possible to determine which analgesics and anaesthetics are the most effective at securing the best outcomes for patients and, at the same time, to identify therapies that minimise the risk associated with drug-related adverse events. In conditions of acute nociceptive pain and osteoarthritic pain, there is evidence to suggest that paracetamol is an effective analgesic,[14-16] that it compares very favourably with other interventions and thus should be considered as an integral component of long-term pain management strategies.[17]

4.2 Efficiency

In relation to efficiency, it is essential to realise that the cost of treatment is not simply the cost of drugs or medical and nursing time, but the total cost of providing the treatment.[12] The extent of the costs of dealing with adverse events have been widely documented, and were summarised in a recent review.[18] Expert guidelines have consistently recommended paracetamol, not NSAIDs, as the initial oral drug treatment for osteoarthritis, because of its excellent safety record.[17,19] In addition, the relatively low cost of paracetamol means that it is also the least expensive pharmacological option, with many patients buying the product themselves. It is clearly the preferred drug when economic factors are taken into consideration,[20,21] especially given that, with regard to NSAIDs, 'the additional costs may actually double the direct cost of treatment for conditions requiring analgesia and anti-inflammatory therapy.'[22]

4.3 Equity

Policy initiatives designed to improve equity would seek to ensure that good quality services were both available and accessible for all patients. However, there are many examples of major inequities and inequalities in the management of pain services[23,24] – a problem that is likely to deteriorate, as demographic factors intensify the demand for such services for the foreseeable future. Similarly, although pain management programmes were regarded as relatively high priority in a survey in Scotland, it was noted that there had been very limited development of such programmes.[25] It has been strongly advocated that society has an obligation to reduce levels of pain and restore normal functioning, based upon both moral principles and economic reality,[26] and yet it is very evident that pain is not given the attention it warrants, based on prevalence rates, its economic cost and the detrimental effects it has on quality of life.[8,12,23,26]

5. Conclusion

Chronic pain remains an intricate syndrome for which analgesic therapy is only one part of the treatment. Pharmacological interventions should be viewed within the context of an overall pain management strategy, geared to the needs of the individual patient, and constructed on the basis of effectiveness, efficiency and equity. The burden of suffering that pain imposes on individuals and the enormous costs that society has to bear, provide a sound rationale for greater emphasis to be given to pain management and a broad, strategic perspective to be used in decision-making in this area. Within this projected new world of joined-up thinking, there would be a clear and important role for paracetamol: it has been shown to be relatively effective, it is known to be relatively safe, it is relatively inexpensive, it is accessible on prescription and over the counter, and is acceptable to patients.

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