NEWS

CHANGE PAIN Scale – A new tool for improving physician-patient communication

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Common understanding of pain impact is the basis for adequate pain management

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First results of the CHANGE PAIN Physician Survey confirmed that there are still very large differences in daily practice of severe chronic pain management in Europe. The survey investigates the different approaches physicians across Europe follow when treating chronic non-cancer patients. Although treatment of severe chronic pain often requires the use of strong analgesics, approximately one-fifth of healthcare professionals stated they never prescribe strong opioids for this condition – one reason among others why so many patients in Europe are still undertreated.

If we are to improve chronic pain management better education on the adequate use of analgesics is required at both the university and post-graduate level. A deeper knowledge of the underlying mechanisms of pain, different pharmacological principles and further options is of high relevance to choose tailored treatment for the individual.

At its second meeting, the international CHANGE PAIN Advisory Panel agreed on a new educational programme designed to move treatment from symptom control towards mechanism-based multi-modal management of chronic pain. Moreover, the group has devised the CHANGE PAIN Scale, a new user-friendly communication tool aimed at assessing pain via a more holistic approach, taking into account patients’ expectations on pain relief and quality of life improvement.

Published with the support of the European Federation of IASP Chapters (EFIC), the CHANGE PAIN News & Reviews Journal summarises the solutions developed by the expert group – helping physicians to optimize current pain management strategies and achieve better therapeutic outcomes.

Professor Giustino Varrassi
President of the European Federation of IASP Chapters (EFIC)
CHANGE PAIN SCALE –
A NEW TOOL FOR IMPROVING PHYSICIAN-PATIENT COMMUNICATION

To provide optimal pain management, healthcare professionals need to consider not only their patients’ present status of pain but also individual expectations. Effective communication is required to fully understand a particular patient’s condition but is very often compromised by communication barriers from both physicians and patients.

Poor communication between physicians and patients has been demonstrated by a German study in which physicians and patients assessed separately patients' pain intensity and the pain dependent impairment in rehabilitation training in chronic low back pain patients. Only in 19.4 % physicians precisely rated patient’s pain and impairment. The relevance of adequate pain assessment is highlighted by a responder rate of 92.3 % in this group (see Figure 1).

Language barriers, cultural traditions, cognitive impairment or misunderstanding may influence communication between physicians and patients. Patients may also be reluctant to report pain due to low expectations of obtaining effective analgesia or they may fear drug-related adverse effects, tolerance or addiction (Glajchen, 2001). Many patients complain that their pain is not taken seriously enough and not adequately managed due to physicians’ lack of knowledge about pain and unsuccessful pain treatment (Roper Starch Worldwide, 1999). This is even more distressing since patient satisfaction is highly correlated with the healthcare provider’s attention to the treatment of pain (McCracken, 2002). Thorough evaluation of pain sufferers’ problems and understandable explanations of conditions and treatment options contribute to patients’ willingness to report their pain related impairment.

Adequate pain assessment
In order to improve communication between healthcare professionals and patients detailed documentation of pain and quality of life aspects are recommended. Current assessment of pain is primarily done through methods focusing on the quantification of pain, such as the Visual Analogue Scale (VAS), Numerical Rating Scale (NRS), and Verbal Rating Scale (VRS). Although these scales may be useful in clinical studies and for the follow up of pain development, they are of little use for singular assessment of pain severity. Since these scales are very much based on a subjective estimation of the severity of pain, there is frequently a disparity between the clinician’s and patient’s rating of pain intensity with clinicians often underestimating the situation (Glajchen, 2001). Moreover, even among physicians there is no common understanding where se-
vere pain begins – with the majority of healthcare professionals rating severe pain to start anywhere between 4 and 8 on an 11-point NRS (Varrassi, 2010). Furthermore, due to inadequate assessment skills and time constraints clinicians frequently have difficulties in understanding the level of pain reported by patients (Berry, 2001).

Assessing quality of life aspects is also important to improve the success of pain management. Several detailed questionnaires exist, e.g. SF36/SF-12, WOMAC, EuroQol (EQ-5D), providing information on various aspects such as limitation of daily activities, patient energy, emotional health problems and social activity. But since these tools are relatively time consuming, they are more suitable for pain specialists rather than general practitioners.

### CHANGE PAIN Scale

Based on the Individual Treatment Target, defined by Müller-Schwefe and Ueberall (2006), the CHANGE PAIN Advisory Board has adapted a new tool helping to improve patient-physician communication by identifying key elements of treatment success and expectations of the patient. The present pain level is assessed on an 11-point NRS related to the individual treatment goal in terms of pain severity. In addition, the impact of pain on everyday living with regard to quality of life aspects is evaluated. This helps physicians and patients to agree on the need for improvement to set realistic expectations and individual treatment targets.

### REFERENCES

1. Müller-Schwefe GHH, Ueberall MA. Pain Intensity of Patients with Chronic Low-Back Pain: Induced Restrictions to follow Standardized Rehabilitation Programs are Frequently Underestimated by Physicians and Physiotherapists - Results of a Prospective German Quality Assurance Program, WIP Poster 2, Proceedings of WIP Conference, 2004.

### COMMENTARY

**Dr Gerhard H.H. Müller-Schwefe, President of the German Association for Pain Therapy (DGS), Germany**

In order to manage chronic pain successfully, physicians need a clear understanding of their individual patients. Pain intensity by itself does not mean very much. It is always correlated to quality of life impairment, e.g. with respect to sleep quality, general activity and mood. Many instruments are available to assess the impairment of quality of life related to pain but these tools are usually time consuming. The new CHANGE PAIN Scale is a quick and user-friendly instrument to enhance communication between physicians and patients by establishing individual treatment targets. It allows the physician to assess the pain intensity of a particular patient and also to evaluate the daily impairment. This information will help the physician to choose the right treatment.
Epidemiological evidence indicates that a substantial proportion of adults in Europe suffer from chronic pain, which seriously affects the quality of their social and working lives. The 2008 National Health and Wellness Survey (Kantar Health, Inc., 2008), which collected data from over 53,000 participants in five major European countries (DE, F, IT, ES, UK), showed that about one in five people had experienced pain in the last month, with moderate and then severe pain being most common. Back pain was found to be the main cause of moderate to severe pain. Women were more likely to be affected by severe pain than males.

Chronic pain – a burden to patients and society
Chronic pain has a considerable effect on patients’ quality of life with the majority of sufferers reporting that it severely affects sleep patterns, the ability to exercise, walk, perform household chores, attend social activities, and maintain an independent lifestyle (Breivik, 2006). The prevalence of co-morbidities such as anxiety, migraine and depression was shown to be higher in pain sufferers than in the general population and increases with pain severity (Kantar Health, Inc., 2008). As a result, pain patients place an increased burden on healthcare resources through increased numbers of visits to family doctors, emergency rooms and hospitalization. The National Health and Wellness Survey also demonstrated the effect of pain in the workplace, with a significant decrease in work productivity being reported. It has been estimated that nearly 500 million working days are lost every year as the result of chronic pain, costing the European economy at least 34 billion Euros (Pain in Europe Report).

Treatment differences in Europe
With regard to pharmacological therapy currently there is no common approach to treat chronic pain patients. In general, physicians in Northern Europe are much more willing to prescribe opioids than their colleagues in the South (Varrassi, 2010). First results of the CHANGE PAIN Physician Survey confirmed the very large differences in the daily practice of severe chronic pain management: The majority of physicians agree that there is little knowledge of the pharmacological characteristics of different pharmacological treatment options within the broad medical community, and almost a fifth state that they never prescribe strong analgesics for severe chronic non-cancer pain conditions, such as low back pain (Varrassi, 2010).

Furthermore, there is no common understanding of what constitutes severe pain. When questioned on where they perceive severe pain to start on an 11-point Numerical Rating Scale (NRS), most participants put this in the range from 4 to 8.

Further results illustrate the unmet medical needs and challenges in the treatment of severe chronic pain. For the majority of physicians reduction of pain is the main treatment goal, followed by improved quality of life and better physical functioning. Physicians’ major determinant for choice of analgesic is the balance between efficacy and side effects. Gastrointestinal side effects are mentioned as the main reason for treatment failure of classical strong opioids in severe chronic non-cancer pain patients, with analgesic tolerance development and lack of efficacy also being important factors.

The survey also disclosed a limited awareness of the physiological difference between nociceptive and neuropathic pain in the broad medical community. Most of the physicians agreed with the statement that in severe chronic low back pain patients a neuropathic component is often not clearly diagnosed. However, studies have indicated that up to 77% of severe chronic back pain patients have a suspected neuropathic component (Freynhagen, 2006). 80% of the participants of the CHANGE PAIN Physician Survey regarded pain with a neuropathic component as more severe and difficult to treat. Pharmacological treatment of severe chronic low back pain varies widely: Of the 403 respondents, 7% choose monotherapy while among the 93% choosing combination therapy there are 104 different combinations of substance classes mentioned (see Figure 2).
Conclusion
There is a high prevalence of chronic pain in the general population across Europe. As yet there is no common definition of what constitutes severe chronic pain and no consensus on the adequate approach to effective treatment, many pain sufferers are undertreated resulting in a negative impact on patients’ quality of life and healthcare expenditure.

The first results of the CHANGE PAIN Survey are now available on the website: www.change-pain.com

References
MECHANISM-ORIENTATED PHARMACOLOGICAL MANAGEMENT OF CHRONIC PAIN

Current treatment of chronic pain is largely based on the severity of pain. Various guidelines exist to aid clinicians by suggesting recommended treatment options for different pain conditions. The best known of these is the World Health Organisation (WHO) three-step pain ladder which was originally developed for chronic cancer pain but is now also applied to non-cancer pain (WHO, 1996). It advocates the initial use of non-opioid analgesics, followed by weak opioids and strong opioids as the severity of pain increases. However, since most chronic pain conditions are multifactorial in nature (e.g. nociceptive and neuropathic components present) effective pain management needs to take into account the underlying mechanisms in order to choose the most appropriate treatment. Hence, pain management decisions should depend on the underlying mechanisms and not only on the intensity of the pain.

Ideally, clinicians would identify the specific causal mechanisms underlying each patient’s symptoms and correspondingly prescribe the most appropriate therapy. However, identifying these mechanisms in practice is difficult, as one mechanism can produce different symptoms and one symptom can be produced by different mechanisms (Woolf, 1999).

In order to allow a more targeted approach to the choice of pharmacological treatment a better understanding of these mechanisms and pharmacological principles of drugs is vital.

Pain processing systems
For the modulation of pain the opioidergic and monoaminergic systems are highly relevant. Both play a key role in the ascending and descending pain pathways (Pastersak, 2010; Benarroch, 2008). In acute nociceptive pain, pain modulation is to a large extent regulated by the opioidergic system: µ-opioid receptor agonists influence and directly inhibit the transmission of pain signals via the ascending pathway. In addition, µ-opioid receptor agonists are also involved in the modulation of pain signals on a supraspinal level with modulating impact on the descending pathways. In chronic pain, which is often associated with neuropathic components, alterations of the opioidergic system can lead to a reduction of opioid responsiveness, e.g. analgesic tolerance and/or opioid-induced hyperalgesia (Ballan-
Due to the multifactorial nature of chronic pain, patients often suffer from more than one pain mechanism. In chronic low back pain, for example, there can be a combination of nociceptive and neuropathic pain. The latter is often difficult to assess, due to its complex pathophysiology, and a challenge to treat. Since healthcare providers often base their treatment choice on personal experience rather than underlying mechanisms, chronic low back pain patients are in many cases not adequately treated.

Taking into account the multifactorial aetiology of chronic pain I recommend tailoring pharmacological treatment according to the corresponding mechanisms. In theory, by combining multiple analgesic actions in one drug, the quality of life of chronic pain patients might be improved.

**References**

Mechanism-based pain diagnosis – issues for analgesic drug development
Woolf CJ, Mitchell BM, Max MD
Anesthesiology, 2001, 95:241-249

Research to elucidate the mechanisms that contribute to the pathogenesis of pain has indicated that pain can be generated in multiple ways at a number of different sites that may coexist between and across diverse disease states. However, in clinical studies within conventional diagnostic groups of chronic pain patients there are subgroups with differing responses to drug treatment. Different aspects of pain are likely to be mediated by different input channels which represent the first anatomic target for treatment. The pain evoked by these input channels represents the operation of multiple mechanisms such as nociceptive transduction, peripheral sensitisation, altered sensory neuron excitability, central sensitisation, and synaptic reorganisation.

At present there are no diagnostic tools that can unmistakably identify which mechanisms are present in a given patient so analysis is often based on symptom clusters such as spontaneous pain or stimulus-evoked pain rather than just on disease. Tissue type may provide a clue to mechanism due to differing innervation pattern and mix of neurotransmitters. Also drug challenge can be used as a diagnostic test to guide treatment decision.

A co-ordinated effort amongst research sectors is required to improve the knowledge on the impact of basic mechanistic insights on pain treatment.

Neuropathic pain: aetiology, symptoms, mechanisms, and management
Woolf CJ, Mannion RJ

Neuropathic pain resulting from damage to the nervous system comprises a complex combination of negative symptoms or sensory deficits such as loss of sensation and positive symptoms including dysesthesia, parasthesia and pain. This altered sensitivity is brought about by a change in the function, chemistry, and structure of neurons. There is no treatment to prevent the development of neuropathic pain, nor to adequately, predictably, and specifically control established neuropathic pain. Improvements require targeting the mechanisms that produce the symptoms rather than the aetiology of the original insult to the nervous system.

There is a wide range of mechanisms causing peripheral neuropathic pain including sodium channel imbalance, increased transmission, and α-receptor expression, all of which can cause spontaneous pain. Central sensitisation may result in hyperalgesia in response to stimulus.

Sensitive and specific diagnostic tools are required to reveal the particular pathological processes that are responsible for the pain in an individual, but these will only be of value if the mechanisms can be adequately targeted with specific therapy. The responsibility will then be on the clinician to use the history, examination, investigation and diagnostic tools to identify the mechanisms operating in their patients and select the appropriate treatment.

New approaches to the pharmacotherapy of neuropathic pain
Besson M, Piguet V, Dayer P, Desmeules J

As neuropathic pain is refractory to classical analgesics, and as our understanding of the mechanisms generating pain has increased, a mechanism-based approach to treatment has been advocated. However, clinical development has been disappointing due to the number and complexity of the pathophysiological mechanisms involved. Translating pain complaints and sensory findings into specific clinical mechanisms that have treatment implications requires further research.

One mechanism may produce various symptoms, while on the other hand one symptom can be the result of a variety of mechanisms. Typically, clinical mechanism-based studies include fewer than 40 patients, are extremely labour intensive and require specialised equipment for testing. Another element is the role of interindividual variability which can be environmentally or genetically related. Psychological factors and/or comorbidities, as well as the social repercussions of pain, need to be taken into account in these mechanistic trials.

Another emergent topic is the role of genetic polymorphisms in the interindividual variability in response to analgesic treatment. These may be a result of molecular differences at the level of drug-transport proteins or metabolism enzymes and drug targets. An evidence-based approach is essential for testing the drugs in large patient populations.
In order to provide enhanced pain management there are a number of key factors which need to be addressed. Better physician-patient communication and pain assessment skills will help to meet individual treatment targets. Improved knowledge of the pharmacological differences of available treatment options and better understanding of the underlying pain mechanisms will help to choose the right therapy for the individual patient. These aspects can only be implemented through advances in medical education.

A greater emphasis needs to be placed upon pain management at the medical undergraduate level. For example a recent report in the UK showed that the median time spent on pain management by a medical student was only 13 hours, and could be as little as 6 hours. Furthermore, the subject was taught "as piecemeal," i.e. as part of other topics and not as a module in its own right (British Pain Society, 2009).

Considering that pain management ideally involves measuring symptoms and treating the underlying pain mechanisms, the focus of pain education needs to change from symptom control to multi-modal mechanism-orientated pain management. This shift should be accompanied by initiatives to boost the education of healthcare professionals on the adequate use of analgesics taking into account the physiological differences of the underlying pain.

PAIN EDUCATION

Since pain assessment is essential for successful pain management a thorough understanding of pain pathophysiology is of high relevance. CHANGE PAIN is committed to improve patient outcomes by developing solutions for daily practice. PAIN EDUCATION is a new educational programme focusing on the insights resulting from the discussions of the CHANGE PAIN group. Three comprehensive eCME modules which will offer a basis for a structured and lasting educational approach in line with the criteria for European accreditation (UEMS-EACCME) are currently being developed. By ensuring a modular learning approach the courses will be adaptable to the individual needs of healthcare professionals. The one hour eCME modules will outline learning objectives based on a detailed needs assessment and involve a post-test questionnaire to deepen physician’s knowledge.

COMMENTS

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Thorough understanding of pain and its underlying mechanisms is essential for individualized multi-modal management of chronic pain. Physiological differences, e.g. nociceptive vs neuropathic pain, need to be identified in order to choose the best treatment for the individual patient. However, current pain management is in many cases driven by tradition and personal experience focusing mainly on symptom control. In order to improve the treatment of chronic pain patients a better education of healthcare professionals on the pathophysiological principles and adequate use of analgesics is of high relevance. The newly developed training programme PAIN EDUCATION captures these needs – to improve medical education of healthcare professionals.

References

Module 1: Assessing pain and physician-patient communication
This module emphasizes the importance of good communication between physicians and patients in allowing a comprehensive clinical assessment, including psychosocial problems, and treatment expectations. It highlights the importance of assessing pain history in order to gain an insight into the mechanism of the underlying disease. The overall goal of chronic pain management in developing individualized treatment, allowing patients to engage in normal daily activities, is highlighted.

Module 2: Multi-modal management of chronic pain
As effective and early pain treatment is vital for successful pain management, a multi-modal approach to pain management is described, focusing on the pharmacological treatment. The mechanism of action of drugs is discussed, as well as knowledge of efficacy, side effects, drug-drug interactions and tolerance development influencing treatment success.

Module 3: Mechanism-orientated pharmacological treatment of chronic pain
This module provides a basic knowledge on pain physiology and pathophysiology of pain mechanisms. The differences between nociceptive and neuropathic pain are included together with a consideration of typical pain syndromes. The mechanisms of pain (including the sensitization process), choosing a drug based on this understanding, and the rationale for drug combinations are outlined. The module also looks at hands on practice using patient cases to illustrate individualized treatment plans.
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