

## The management of chronic osteoarticular pain in the outpatient setting: results of an ASON audit

MASSIMO MAMMUCARI<sup>1</sup>, SERGIO GIGLIOTTI<sup>2</sup>, ANGELO PUCINO<sup>2</sup>, MARIA CAPEZZA<sup>3</sup>, GIUSEPPE SANTÉ<sup>2</sup> ON BEHALF OF THE ASON STUDY GROUP

<sup>1</sup> Primary Care, Local Health Authority Rome E, Rome, Italy

<sup>2</sup> Local Health Authority NA 1, Naples, Italy

<sup>3</sup> Local Health Authority NA 3, Naples, Italy

### ASON Study Group

Amorico Gaetano (NA), Bartoletti Maria Gabriella (CS), Boccaccio Salvatore (SR), Bonavolontà Angelo (NA), Califano Enrico (NA), Cesari Lucia (RM), Coli Giuseppe (LE), Colombo Stefano Pierluigi (MI), Corsello Calogero (AG), Corsi Claudio (RM), Della Marta Maria Elisa (PV), Denaro Salvatore (SR), Di Bella Enzo (AG), Di Bisceglie Luigi (BA), Franchini Cristina (BO), Gigliotti Pietro (CS), Masuccio Fabio Giuseppe (VC), Mir Djahanbakhsh Langroodi Mir Hasan (MI), Piredda Salvatore (OR), Putaggio Giacomo (TO), Romeo Pietro (VA), Sirianni Giuseppe (KR), Tercon Mauro (RN), Tricarico Arturo (NA), Vian Alessandra (TV).

### Abstract

The management of patients with chronic osteoarticular pain requires a comprehensive clinical evaluation and a multidisciplinary approach. Thirty specialists (orthopedic specialists, rheumatologists, physiatrists), members of the National Association of Osteoarticular Specialists (ASON), attended a specific training course in the use of a standardized medical record designed for the management of osteoarticular pain in outpatients. An audit on 888 medical records was later conducted and it showed that use of this instrument led to an improvement in the diagnostic-therapeutic approach.

A complete and accurate medical record compilation process may also promote collaborative interaction among the healthcare practitioners involved and this can result in greater efficiency and continuity of care. ASON recommends expediting the use of electronic tools to facilitate information-sharing among pain care specialists. This study shows that the use of electronic tools facilitates the exchange of information between healthcare providers. ASON supports the adoption of

similar instruments in order to improve the management of chronic pain.

**Level of evidence:** Level III, cross-sectional survey.

**Keywords:** medical record, osteoarticular, pain, opioids.

### Introduction

Osteoarticular pathology (OAP) is one of the main reasons for visits to pain specialists and for instrumental investigations, and it also generates considerable direct and indirect costs. In Italy, the total cost of chronic pain is nearly 36.4 billion euros annually (ISTAT, 2013 Annual Report). New studies have shown a high incidence of OAP both in hospitals and at regional level (1-3). However, thanks to Italian Law n. 38 of March 15, 2010, we are witnessing a change in the clinical approach to chronic pain patients in hospitals, physician offices and the home care setting. Among other changes, provisions included in the above-mentioned law make it obligatory to report, in all medical records, the characteristics of pain, the pain control techniques provided and the results achieved. Although these provisions may appear unnecessary, they actually underline the importance of a multidisciplinary diagnostic and therapeutic ap-

### Corresponding Author:

Massimo Mammucari, MD  
Primary Care Unit, ASL RME, Rome, Italy  
Via Aurelia 784, 00165 Rome, Italy  
E-mail: massimo.mammucari@libero.it

proach to pain management. The results of treatment documented in medical records include not only changes in pain intensity, but also variations of pain characteristics over time, the occurrence of adverse events, switching of route of administration/opioid (when needed), dosage changes and any lack of efficacy of drug therapy. In fact, it has been shown that when clinicians use standardized medical records and embrace a multidisciplinary approach both clinical and economic benefits are achieved (4). Moreover, the use of medical records in patients under treatment for OAP enables local healthcare practitioners to provide better care and to use analgesic drugs in a more appropriate manner (3-5).

In view of these considerations, ASON decided to invest in the education of local medical specialists in order to standardize a multidisciplinary diagnostic and therapeutic pathway (5) and promote the use of standardized medical records. To this end, a group of local specialists was recruited, in order to assess their attitude towards the use of medical records in patients under treatment for OAP. Aim of the study was to evaluate the improvement of the management of OAP through the use of a medical file dedicated to pain.

## Methods

Thirty specialists (orthopedic specialists, rheumatologists and physiatrists) were invited to attend a training program on the use of medical records for outpatients with OAP. Using the medical records the specialists could collect data on clinical and instrumental tests and on osteoarticular pain treatments. The specialists were also provided with the Brief Pain Inventory and the DN4 (a neuropathic pain diagnostic questionnaire). After finishing the training, the specialists were free to choose whether or not to use the medical records and were not required to follow any protocol. The outcome of the final evaluation was based on the completeness of the medical record and the appropriateness of drug treatment.

The medical records were anonymous. The following aspects of the records were assessed: whether all the parts had been completed, whether any data were missing, and whether there were any differences between

the drugs used by the patients before and after their first consultation with the specialist, as reported in the records. For the purpose of evaluating therapies and treatments, drugs were classified as follows: non-steroidal anti-inflammatory drugs (NSAIDs), opioids and adjuvant therapies (anxiolytics, antidepressants, benzodiazepines, corticosteroids, anticonvulsants, myorelaxants, superficial and deep injections of drugs, physio-kinesiotherapy).

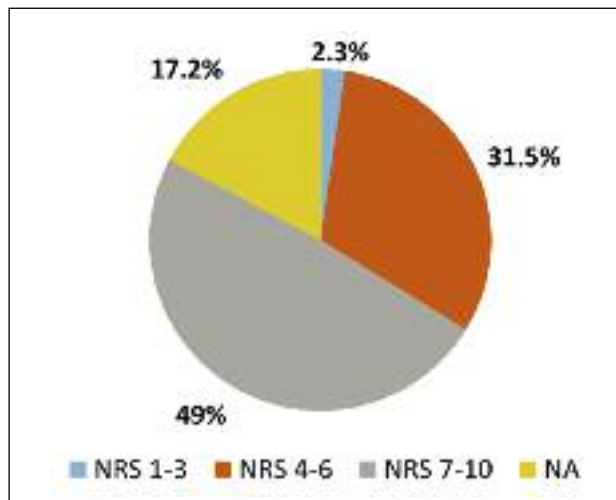
## Results

Four months after the end of their training, all the medical specialists had adopted and were using the medical records and they all participated in the audit process. A total of 888 medical records compiled in the outpatient setting were evaluated. These records, provided anonymously by the specialists, showed that: female patients (n=588) accounted for 66.2% of the cohort, the patients had a mean age of  $63.13 \pm 14.42$  years (median 65 years), and OAP mainly involved the arms and legs (n =424, 47.7%), the thoracic and lumbar spine (n=360, 40.5%) and the cervical spine (n=104, 11.7%).

Pain was rated on an 11-point numerical rating scale (NRS), where 0=no pain and 10=maximum conceivable pain. At the first consultation with the specialist, the study population reported a mean pain intensity of  $6.78 \pm 1.64$  points (median 7). The NRS baseline value was not reported in 17.2% of the medical records (**Fig. 1**). Nociceptive pain was reported in the medical records in 41.9% of cases, whereas neuropathic pain and mixed pain were reported in 17.9 and 31.5% of cases respectively. In the remaining 8.7% of medical records the type of pain was not reported.

In 46.3% of the medical records a pain duration of less than six months was reported, whereas 19.9 and 28.5% of the medical records reported a pain duration of 7 to 12 months or more than 12 months, respectively. In 5.3% of the medical records it was not possible to assess the pain duration.

Hyperalgesia and allodynia were reported in 37.7 and 19.4% of medical records, respectively, whereas in 154 medical records (17.3%) both hyperalgesia and allodynia were noted. It was not possible to assess the presence or absence of hyperalgesia or allodynia in 112



**Fig. 1.** Percentages of medical records relating to patients reporting mild (NRS 1-3), moderate (NRS 4-6), and severe pain (NRS 7-10), at their first visit with the specialist. NA= % of medical records not fully completed.

(12.6%) and 163 (18.4%) medical records, respectively. At the first specialist consultation, it was observed that 78.9% of patients were receiving NSAID therapy, either alone or in combination with other drugs, whereas 24.2% of patients were being treated with an opioid, either alone or in combination with other drugs. After the first specialist consultation, 37.6% of patients were advised to take an NSAID (either alone or in combination with other drugs) and 56.7% of patients an opioid (either alone or in combination with other drugs).

It is to be noted that before consulting the specialist 113 patients (12.7%) were not taking any pain relief medication, or were taking only adjuvant pain medication (n=81, 9.1%).

It was found that 257 (28.9%) of the 888 medical records did not report at least one of the data required to assess the type or intensity of pain or the treatment received.

Thus, analyses were conducted on the remaining 631 (71.1%) medical records, all of which were complete and could thus be evaluated. These records showed that at baseline most (73.3%) of the patients with mild pain (NRS <4) were being treated with an NSAID, and that after the consultation with the specialist this percentage decreased to 53.3%.

A decrease in NSAID use was also observed in the patients with moderate (NRS 4-6) or severe (NRS 7-

10) pain: the percentage of use in these groups declined from 71.5 to 34.0% (moderate pain) and from 54.3 to 13.4% (serious pain). At the same time, the specialist recommended the use of an opioid in 25.5% of moderate pain and in 45.4% of severe pain cases. Generally, NSAID therapy reported at the first consultation in patients with nociceptive pain was suspended by the specialist. Consequently, the percentage of use of NSAIDs decreased from 75.5 to 37.5%; instead, 32.4% of patients were recommended to take an opioid and 16.5% of patients were recommended to take other adjuvants.

In patients with neuropathic pain, at the first visit, 41% of patients reported using NSAIDs, but this treatment regimen was confirmed by the specialist in only 4.5% of them. Conversely, 44.7% of patients were recommended an opioid and 29.1% were recommended opioids in combination with an adjuvant. In the case of neuropathic pain an adjuvant was recommended in 40.3% of cases. In the case of mixed pain, NSAID therapy reported at the first visit (53.8%) was confirmed by the specialist in 12.3% of cases; instead 41.5% of patients were recommended an opioid and 15.1% of patients were recommended an opioid in combination with an adjuvant (**Tab. 1**).

With regard to the reported duration of pain, it was observed that when pain lasted six months or less NSAIDs were the most frequently used class of medication, as reported at the first office visit (64.9%). In these cases, the specialist confirmed the NSAID treatment in 20.4% of cases, recommended an opioid in 40.5% of cases, an NSAID combined with an opioid in 11.5% of cases, and an opioid in combination with an adjuvant in 10% of cases. In patients whose pain had started within the 7- to 12-month period prior to the consultation with the specialist, the proportion receiving NSAID therapy decreased from 57.7 to 21.5%; in 42.9% of these patients an opioid was recommended. In the patients with a pain duration greater than 12 months, the percentage using NSAIDs decreased from 58.6 to 24.3%; in this group, 32.0% of patients were recommended an opioid and 10.5% of patients were recommended an opioid in combination with an adjuvant. In the presence of allodynia and hyperalgesia the percentage of NSAID use decreased from 52.5 to 22.2%, while 39% of patients were recommended an opioid and 22% of patients were recommended an opioid in combination with an adjuvant.

**Table 1.** Percentages of patients receiving the different treatments at baseline and after the consultation with the specialist, as reported in fully completed medical records (n=631).

Type of pain (%, n)	Reported Treatment				Treatment recommended by the Specialist			
	NSAIDs	Opioids	Opioids in combination with adjuvant	Other drugs	NSAIDs	Opioids	Opioids in combination with adjuvant	Other drugs
Nociceptive (44.8%, n=285)	75.8% (n = 216)	7.1% (n= 20)	0.4% (n = 1)	16.7% (n = 48)	37.5% (n =107)	32.6% (n=93)	0.8% (n = 2)	29.1% (n=83)
Neuropathic (21.2%, n=134)	41.8% (n=56)	11.2% (n=15)	10.4% (n=14)	36.6% (n= 49)	4.5% (n= 6)	44.7% (n= 60)	29.1% (n= 39)	21.7% (n=29)
Mixed (33.6%, n=212)	53.8% (n= 114)	16.0% (n =34)	4.3% (n= 9)	25.9% (n =5)	12.3% (n= 26)	41.5 (n=88)	15.1% (n=32)	31.1% (n= 66)

## Discussion

A high prevalence of pain has been reported in Europeans (6) and this situation has economic and social consequences (7). The majority of patients with pain need a multidisciplinary care approach due to the presence of comorbid conditions and related pharmacological treatments. Some patients require frequent consultations with a pain specialist and coordinated care management. It is, in fact, common for orthopedic specialists, rheumatologists, physiatrists, neurosurgeons, pain therapists, other pain specialists and general practitioners to work together to manage the most complex cases. The diagnosis of particular forms of pain and the management of persistent pain and medium- and long-term treatments are some of the challenges faced by practicing clinicians (8-10). Sometimes the initial choice of therapy reflects the fact that many healthcare practitioners strictly adhere to WHO guidelines on pain management that recommend a gradual approach based on the severity of symptoms and not on pathogenetic mechanisms. A pathophysiological approach, however, breaks with old patterns and dictates a personalized treatment in which NSAID use is appropriate if inflammation is present, adjuvant use is appropriate if the specific indications are present, opioid use is appropriate if pain is not relieved by non-opioids, and each drug is chosen on the basis of indications and contraindications.

Therefore, in the absence of inflammation NSAIDs should not be used. In fact, NSAIDs have been re-evaluated and recent reviews have confirmed the risks associated with this class of drugs (11).

A further point to be made is that the specialists provided fully completed medical records in about 71% of cases. In view of this finding, we suggest that audits should be performed periodically in order to raise awareness, among specialists, of the correct use of medical records.

Our experience, albeit limited due to the small number of subjects involved and the short duration of the study, suggests that the use of medical records can help physicians to gain a better understanding of a patient's situation and can help to improve patient management and care. Compiling a medical record in a proper manner and following the steps set out in the diagnostic pathway allow for a better outcome. However, it needs to be pointed out that physicians still tend to prefer paper medical records, even though electronic medical records are known to improve medical practice management and the quality of patient care (12-15).

We strongly support Law 38/2010 and its provisions requiring the "parameter pain" to be recorded (moreover not exclusively as a numerical value pertaining to the intensity of symptoms, but as a complex ensemble of clinical signs and symptoms); these provisions are promoting a cultural change and a multi-

modal therapeutic approach. The medical record used in our study had default fields in order to encourage a more thorough analysis of pain characteristics. As a result, the specialists were led to recommend more appropriate treatments.

Patients with persistent pain, identified on the basis of the clinical characteristics of their pain, were rapidly treated in a more appropriate manner. This provides evidence of the benefit of using an electronic medical record system for the multidisciplinary care of patients with chronic pain. Evidently, the use of medical records is only the first step towards a standardized care pathway for patients with OAP. Medical specialists and general practitioners are indispensable for the triage of patients with pain and for the implementation of continuing care (5).

Additionally, the use of a standardized medical record can facilitate the management of patients with chronic pain who need to take opioids for an extended period of time. In fact, a list of items that need to be consistently assessed can help improve pharmacological management. Electronic tools can facilitate the cultural change envisioned by Law 38; however, only when biases and resistance have been overcome will it be possible to realize the “*Ospedale-territorio senza dolore*” (Pain-Free Hospital and Territory) model. ASON wants to see this change happen and deems multidisciplinary teamwork among local medical specialists, general practitioners, hospital physicians and nurses a moral and organizational priority.

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