



An analysis of consultations requested to a pain clinic

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Background: The study investigated in detail the current status of the consultations requested in a pain clinic. We evaluated the characteristics of the consultations to determine the kind of contents requested, referring departments and factors including demographics, co-morbidities, previous medical problems, and the descriptions of the reasons for the consultation to the pain clinic.

Methods: Clinical data were collected in the authors' institution between 1 January 2009 and 31 December 2013. The medical records were reviewed and compared. Characteristics of both outpatients and inpatients were analysed.

Results: Data from 1,140 patients was available for this study. Seven hundred thirteen individuals belonged to the outpatient group and 427 individuals belonged to the inpatient group. Orthopedic surgery, neurosurgery, and otolaryngology were the main departments that requested consultations to the pain clinic. The most frequent requested lesion and diagnostic term were low back and lumbar spinal stenosis, respectively, and the most common reason for consulting was for "control of pain not controlled by medications." Factors that were significantly different between the two groups were gender, questions about other illnesses apart from the main diagnoses, history of specific diseases, acute onset, cancer, operation within 3 months, and physical system abnormalities.

Conclusions: The medical problems addressed by a pain clinic consultation service were diverse. It is rational to develop standardized guidelines for pain consultations, and treatment strategies aimed at alleviating pain per se as well as caring for comorbid conditions. (*Anesth Pain Med* 2016; 11: 201-206)

Key Words: Consultation, Inpatient, Outpatient, Pain clinic.

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INTRODUCTION

Medical consultation is the process by which physicians pass on advice about a patient's state to specialists and make sure the patients are provided with appropriate specialty-related treatment as well as reflect their medical opinions to their management [1]. The courses of consultation that can result involve identification and assessment of health problems, advocacy of the best approach for patient care, developing effective interdisciplinary communication and skills necessary for patient care, and educating trainees [1,2]. This makes it easy for doctors to construct a pain management, conduct additional examinations, increase the quality of patient care, and achieve early discharge [1]. Particularly the consultations referred to the pain clinic look like the special considerations. Clinicians in a hospital are faced daily with many questions related to a patient's pain problem. Consultants from other departments' expect the pain physician to estimate the pain by patients and address tricky situations. However, there is little previous research on consultations in other departments that refer patients to pain clinics. Therefore, we thought it would be meaningful to collect the characteristics of the patients visiting the pain clinic and analyse the data from cases referred to a pain clinic. This study was done to better the perception and expectation of other department's doctors to the pain clinic, with the goal of identifying priorities of pain specialists.

MATERIALS AND METHODS

Clinical data of patients referred to the pain clinic from other departments at our hospital between 1 January 2009 and 31 December 2013 was collected. Pain specialists replied to questions regarding outpatients who visited the pain clinic and their visits with hospitalized patients. Retrospective comparison

between characteristics of outpatients and inpatients was done. The number of outpatients visits to the pain clinic and, hospitalized patients referrals to the clinic were determined by year.

We investigated the distribution of gender of the referred patients, age, departments that requested pain clinic consultation, lesions causing chief complaints, causes of illness, and expressions described. Underlying co-morbidities were classified into cardiovascular, respiratory, endocrinal, gastrointestinal, central nervous system, genitourinary, hematologic, and others.

For statistical analysis, we performed univariate logistic regression to identify the difference between two groups. A P value ≤ 0.05 was considered significant.

RESULTS

We collected the data from 1,140 patients. Of these 713 were outpatients and 427 were inpatients. The number of outpatient visits was 838 in 2009, 1,721 in 2010, 2,598 in 2011, 3,387 in 2012, and 3,722 in 2013. Consultations of patients from other departments involved 89 patients in 2009, 166 in 2010, 160 in 2011, 150 in 2012, and 148 in 2013. The number of consultations of hospitalized patients from other departments was 61 in 2009, 65 in 2010, 88 in 2011, 92 in 2012, and 121 in 2013 (Fig. 1).

The 1140 patients comprised 385 men (33.8%) and 755 women (66.2%). The aged ranged from 13 to 95 years. The median age was 58.0 years and the number of individuals over 60 was 511 (44.8%). Orthopedic surgery (60.6%), dermatology (7.2%), and neurosurgery (6.7%) were the main departments

that requested outpatient consultations to the pain clinic. Orthopedic surgery (12.9%), neurosurgery (12.2%), and hemato-oncology (10.1%) were the main source of inpatients referrals (Fig. 2). Among all outpatients, 26.2% suffered from low back pain, 21.5% from pain in the shoulder and upper arm, and 8.6% from neck pain. Of the inpatients, 22.0% complained of low back pain, 11.9% of abdominal pain, and 12.6% of facial problems (Fig. 3). The most frequent diagnostic terms used to describe outpatients were lumbar spinal stenosis (14.4%), herpes zoster and postherpetic neuralgia (9.8%), and cervical radiculopathy (6.9%). Most frequent diagnostic terms for, inpatients were cancer pain (17.1%), herpes zoster and postherpetic neuralgia (9.1%), and lumbar spinal stenosis (7.7%) (Fig. 4). The most common

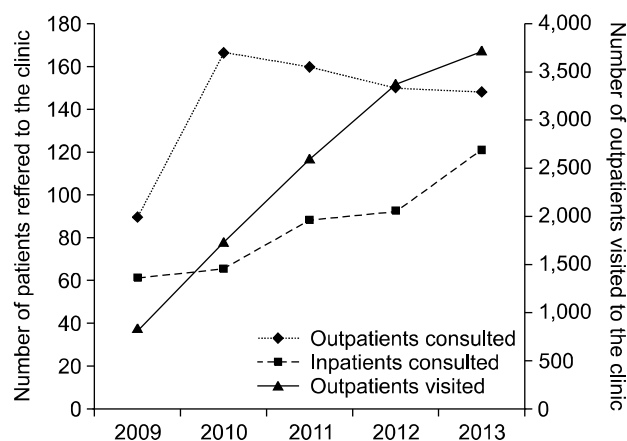


Fig. 1. Number of patients referred to the pain clinic compared to increased number of outpatients visited without consultations.

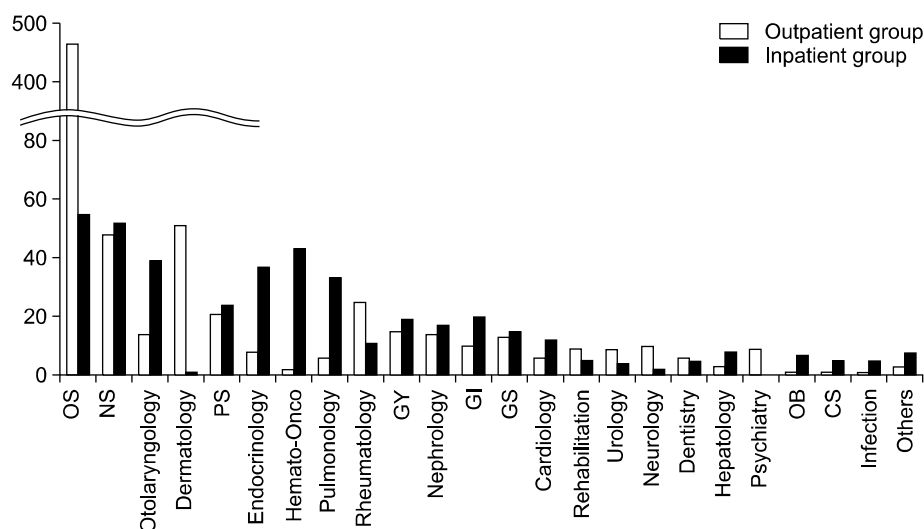


Fig. 2. Departments requesting pain clinic consultation. OS: orthopedic surgery, NS: neurosurgery, PS: plastic surgery, Hemato-Onco: hematology and oncology, GY: gynecology, GI: gastroenterology, GS: general surgery, OB: obstetrics, CS: chest surgery.

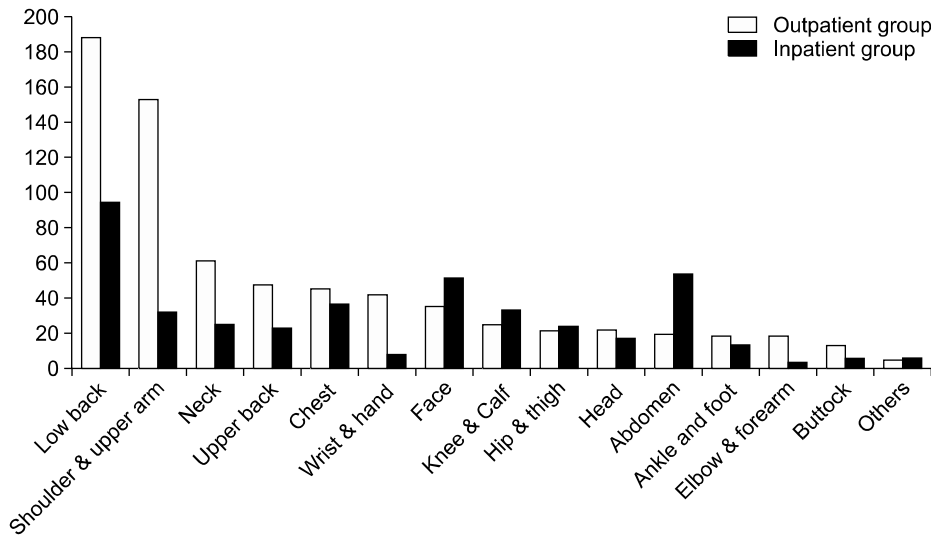


Fig. 3. Classification of lesions causing chief complaints.

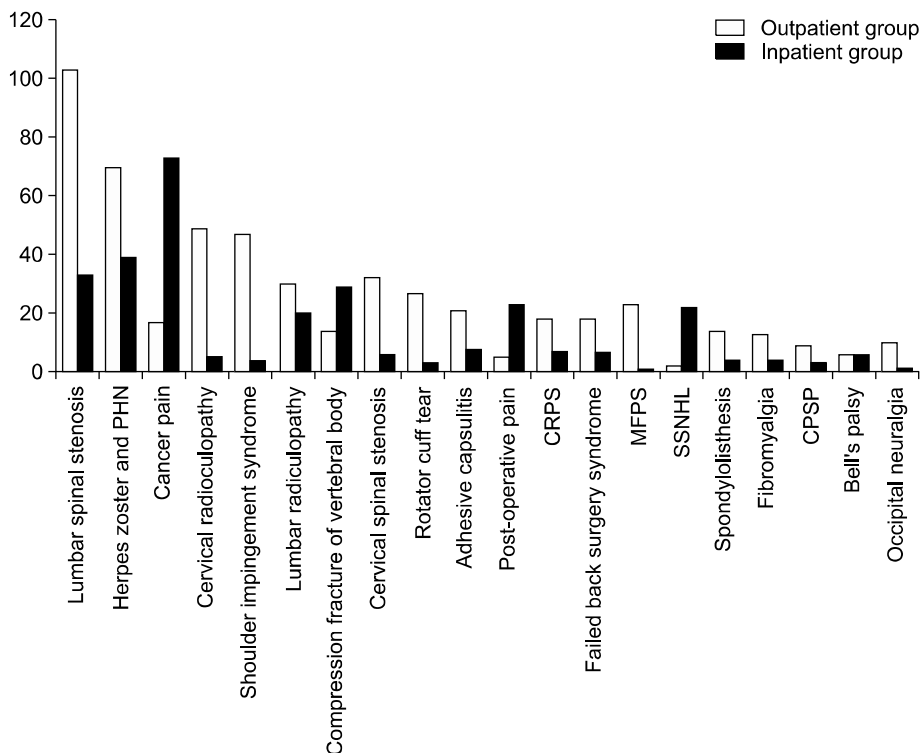


Fig. 4. The top 20 diseases for consultation. PHN: post-herpetic neuralgia, CRPS: complex regional pain syndrome, MFPS: myofascial pain syndrome, SSNHL: sudden sensorineural hearing loss, CPSP: central post-stroke pain syndrome.

expressions used by the requesting doctors in the outpatient group were for “control of pain not controlled by medications” (60.4%), “request for a nerve block” (16.1%) and “investigation, diagnosis, and treatment in the pain clinic” (5.0%) (Table 1). The common expressions for the inpatient group were the same for the outpatient group, with a respective incidence of 40.7%, 30.9%, and 7.7% (Table 1). Rare reasons for requesting a consultation include evaluating

disability rating, issuing an insurance paper, and receiving medicolegal attention. Questions about medications included those regarding side effects, opioids addiction, dosage, and changing to another drug. The factors that showed the significant higher incidence in inpatient group were male gender, questions about other illnesses apart from the main diagnoses, history of trauma, acuteness, cancer, previous surgery in the past 3 months, and respiratory, endocrinal,

gastrointestinal, genitourinary, and central nervous system abnormalities, the prevalence of rheumatic diseases was higher in outpatients (Table 2).

DISCUSSION

Pain is the most frequent complaint of patients who visit clinicians [3,4]. Poor outcomes can often result from

inadequate assessment and treatment by a professional without the proper training to manage the pain disorders [5,6]. The accuracy of a clinical judgement depends on consultation with pain specialists with medical training and experience in a variety of pain diseases [5,6]. A pain clinic is capable of systematic pain management by specialized pain clinicians, with consulting assistance by other physicians. A pain clinic generally acts as a consultation resource for other medical

Table 1. Frequent Expressions Described for Consultation

Outpatient group (n = 713)		Inpatient group (n = 427)	
For control of pain uncontrolled by medications	431	For control of pain uncontrolled by medications	174
Request for a nerve block	115	Request for a nerve block	132
For diagnosis, examination, and treatment of the pain clinic	36	For diagnosis, examination, and treatment of the pain clinic	33
Control of postoperative pain	28	For further evaluation and proper management	27
For injection therapy	15	Request for PCA	22
Request for TPI	13	Questions of the medications*	8
Request for diagnostic block to decide the operative lesion	8	Patient's hope to undergo management of the pain clinic	5
Patient's desire to receive non-operative management	7	Epidural labor analgesia	4
For further evaluation and proper management	6	Epidural blood patch	3
Questions of the medications*	4	Request for TPI	3

Values are number of patients. PCA: patient-controlled analgesia, TPI: trigger point injection. *Questions about medications include those regarding side effects, opioids addiction, dosage, and changing to another drug.

Table 2. Results of Univariate Logistic Regression

	Outpatient group (n = 713)	Inpatient group (n = 427)	OR (95%CI)	P value
Demographic factors				
Male	215 (30.15)	170 (39.81)	1.53 (1.19–1.97)	0.0009
Age (> 60 years)	305 (42.78)	206 (48.24)	1.25 (0.98–1.59)	0.0726
Clinical factors				
Questions about other illnesses apart from the main diagnosis	65 (9.12)	119 (27.84)	3.85 (2.77–5.36)	< 0.0001
Other department's invasive procedures	20 (2.81)	10 (2.34)	0.83 (0.39–1.79)	0.6368
Trauma	46 (6.45)	49 (11.48)	1.88 (1.23–2.87)	0.0034
Rheumatologic disease	74 (10.38)	17 (3.98)	0.36 (0.21–0.62)	0.0002
Psychiatric diseases	88 (12.34)	66 (15.46)	1.30 (0.92–1.83)	0.1372
Acuteness	65 (9.12)	125 (29.27)	4.13 (2.97–5.73)	< 0.0001
Cancer	25 (3.51)	84 (19.67)	6.74 (4.23–0.73)	< 0.0001
Previous operation before 3 months	57 (7.99)	74 (17.33)	2.41 (1.67–3.49)	< 0.0001
Abnormality factors				
Cardiovascular	509 (71.39)	307 (71.90)	1.03 (0.79–1.34)	0.8540
Respiratory	39 (5.47)	57 (13.35)	2.66 (1.74–4.08)	< 0.0001
Endocrine	131 (18.37)	123 (28.81)	1.80 (1.36–2.38)	< 0.0001
Gastrointestinal	63 (8.84)	74 (17.33)	2.16 (1.51–3.10)	< 0.0001
Hematologic	9 (1.26)	11 (2.58)	2.07 (0.85–5.03)	0.1092
Genitourinary	33 (4.63)	58 (13.58)	3.24 (2.07–5.06)	< 0.0001
Gastrointestinal nervous system	55 (7.71)	49 (11.48)	1.55 (1.03–2.33)	0.0338
Musculoskeletal	86 (12.06)	64 (14.99)	1.29 (0.91–1.82)	0.1578

Values are number of patients (%). The significance criteria were set at 0.05.

specialties, in a process where associated doctors seek the advice of pain specialist's concerning decision-making on a range of topics including diagnosis and therapies, and use the information to guide case management. Consultation includes the treatment planning, diagnosis, and additional checkup, ultimately supporting a doctor's referral and making patients comfortable [1].

Since the pain clinic was established in 1995 at Bucheon St. Mary Hospital, the overall number of patients has increased. Although the rates of referral from other departments to pain clinic patients varies from hospital to hospital due to institutional factors including composition, size, and tradition, past investigations reveal relatively high rates [4,7]. Presently, the number of hospitalized patients consulted from other department steadily increased, but the number of outpatients consulted decreased slightly. The proportion of latter to the overall number of outpatients decreased continuously. This would reflect the increased tendency of patients to visit the pain clinic of their own volition rather than being referred from other hospital departments. This may be due to increased public's awareness about pain clinics. The increasing referral of hospitalized patients from other departments is thought to be due to the increased recognition of the value of the pain clinic by other physicians.

In this study, hospitalized men with pain problems had a tendency to be referred to our pain clinic. It is conceivable that there are high-risk male inpatients who receive consultations. The mean age of all patients in our study was 57.4 years, similar to prior studies [8-11].

Patients were most often referred from the department of orthopedic surgery. This may reflect the fact that incurable pain manifests in many degenerative diseases [8]. Most patients in pain clinics included age groups associated with degenerative change [9]. Also, the finding the one-quarter of patients suffered from low back pain, with lumbar spinal stenosis as the most frequently requested diagnostic term are consistent with other studies [4,12,13]. The high ratio of patients with low back pain who are referred to a pain clinic may reflect other clinician's prejudiced impression that the chief function of a pain clinic is to remedy backache [9]. The validity of this speculation is reinforced by the present demonstration that the most frequent lesion was low back area in both outpatient and inpatient groups.

A pain clinic consultation may be helpful in managing complications and treating pain induced by surgeries, injections, and invasive procedures performed by other departments. The

consultants expect pain physicians to perform nerve blocking procedures when encountering pain that is not responsive to medications [14,15]. Nerve block is a common practice in pain clinics [8,9,15].

Critical care patients and terminal cancer patients are being increasingly referred to pain clinics for palliative pain control. Cancer pain is complicated and can be irreversible; a multidisciplinary therapy team approach in cooperation with the pain physician may be able to achieve better results [2,9]. Co-morbidities among these patients also requires careful considerations in the consultation process [1,10,16]. A preponderance of questions about other illnesses apart from the main diagnosis and a history of trauma place an emphasis on co-morbid diseases in hospitalized patients. A number of pain disorders stem from traumatic injury [17,18]. Injury-related pain can progress to illness that drives referral of patients to pain clinics [5]. Patients with rheumatic disease have an increased tendency for pain clinic referral due to the unusual manifestations of pain [19-22]. The relatively high prevalence of rheumatic diseases among outpatients may reflect the insufficient efficacy of medication alone in rheumatology [23]. Although there was no statistical significance, the overall incidence of mental illness (13.5%) in our survey is further evidence of the prevalence of mental abnormalities among patients with chronic pain [24]. Nicholson and Verma [5] revealed potential biopsychosocial risks among patients with chronic pain and emphasized that patients with disease-associated pain must be screened for psychiatric disorders. The finding of more patients with cancer or a history of surgery in the past 3 months in the inpatient group compared to the outpatient group is understandable considering the severity of the disease and procedure.

The study had several limitations. Firstly, our institution is a secondary teaching university-affiliated hospital, which might influence patient features and/or outcome. Our institution lacks the variety of equipment available to pain therapy at specialized organizations, such like multidisciplinary pain clinics. Further studies should address multi-institutional and subspecialty cases including palliative care and particularly difficult cases requiring advanced intervention. Secondly, there is the possibility that we may not have directly understood other clinicians' intentions because we dealt with only written descriptions. More research is necessary to determine why other specialists make referral decisions to the pain clinic and the variety of factors that influence their decisions [25]. The methodologically retrospective approach could have resulted in

such a limitation.

It is important to pay attention to developing treatment strategies aimed at alleviating pain per se as well as caring for comorbid conditions. Pain often passes untreated or under-treated, often because of insufficient understanding of the nature of pain among physicians [3]. Education regarding pain medicine should be promoted in medical schools and training institutions [6]. In addition, many cases of postoperative pain seem to reflect a tendency of surgeons to under-estimate the importance of postoperative pain including the relatively high prevalence of neuropathic pain [2,26,27]. All patients with pain conditions should be evaluated by professional pain clinicians with proper training to assess severity and to arrange appropriate management [5]. The present findings imply that pain clinic consultations are sought with the expectation of better patient outcome by clinicians from other departments with respect to diverse pain problems. Also it is rational to develop standardized guidelines for pain consultations immediately. As the role of pain clinics expands, further research is needed to clarify the essence of successful consultation and associated factors. A multifactorial approach allows for the maximized relief of patients from correlative pain conditions and their satisfaction.

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