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Epidemiology and pathogenesis of incident pain related disability in malignant hematology: an Italian survey

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Abstract: not required

To the Editor,

Breakthrough pain (BTP) is defined as a transitory exacerbation of pain experienced by a patient with an otherwise stably maintained analgesia¹. BTP encompasses several specific categories of pain which can be distinguished because of their unique physiopathology. Pain on movement, also called incident pain (IP), represents a distinct kind of BTP. IP strongly limits physical activity in most cancer patients, portraying a negative impact on their quality of life (QoL)². IP^{3,4} and motor disability (MD)^{5,6} have been reported as common concerns for patients with hematological malignancies (HM), especially for those affected by multiple myeloma (MM)⁷. In order to explore the relationship between IP and MD we have conducted a 2-year observational study including a consecutive sample of 130 HM patients admitted to our hematological unit from November 2007 to November 2009. Activities of Daily Living (ADL) of each patient were assessed weekly by Barthel Index⁸; the impact of IP in limiting ADL and motor function was measured as follows: grade 1 (absence of motor disability), grade 2 (mild functional motor impairment without any impact on ADL), grade 3 (motor disability with mild to moderate impact on ADL) and grade 4 (motor disability with severe impairment of ADL). There were 130 patients with a median age of 67 (41 – 79) years. Among 130 patients, the HM diagnoses were as follows: 43 (33%) acute leukemias, 43 (33%) Non-Hodgkin's lymphomas, 22 (17%) MM, 22 (17%) myelodysplastic syndromes/chronic myeloproliferative disorders. Out of 130 patients, 55 (42%) presented impaired ADL and 33 (25%) experienced IP. The relationship between IP and MD, expressed in terms of the effect portrayed by the

former in limiting patient's ADL, resulted in grades 3-4 in 14/33 (42%), grade 2 in 10/33 (30,3%) and grade 1 in 9/33 (27,3%) patients respectively. In particular, out of 55 patients with impaired ADL, 9 presented IP as the only disabling mechanism. Details about patients with severe ADL impairment are reported on Table 1. As previously reported, HM may be progressively complicating by debilitating deteriorations of the personal status, physical deconditioning and several forms of MD. Although MD is a frequent complaints of HM patients⁵ which may experience at the same time several forms of IP^{3,4,7}, very few information regarding their origins, frequency and relationship have been provided so far. In the present study we have explored the impact of IP as a pathological mechanism of physical disability. Our data showed that a large variety of IP as underlying cause of MD may be observed in this setting. In conclusion our data provide new insights on a neglected issue in malignant hematology, such as the IP-related MD. Extended data analysis is required to achieve a better understanding about the disablement process and its related risk factors in this setting in order to plan effective programs to treat IP and to identify appropriate targeted rehabilitative approach to prevent disability and, thus far, to provide positive effects on both patient's QoL and caregiver work-load.

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Table 1. Details about patients with grade 3-4 incident pain.					
Patient	Involved organ system	Pain type	Pain site	Cause type	Cause definition
1	Joint	DS	Knee	Disease complications	Arthritis
2	Bowel	V	Abdomen	Treatment	aGVHD
3	Bone	DS	Spine	Treatment	Steroid-related vertebral fracture
4	Bone	DS	Diffuse	Disease directly	Leukemia expansion
5	Bone	DS	Spine	Treatment	Steroid-related vertebral fracture
6	Joint-muscle	MS	Forearm	Disease directly	Leukemia localization
7	CNS/PNS	N	Legs	Treatment	Lumbar puncture
8	Joint	DS	Knee	Disease complication	Arthritis
9	Bowel	V	Abdomen	Treatment	Hemorrhagic cystitis
10	Bone	DS	Diffuse	Disease directly	Leukemia Expansion
11	PNS	N	Spine	Comorbidity	Discal hernia
12	Joint	DS	Hip	Comorbidity	Severe arthrosis
13	Bone	DS	Leg	Disease complications	Lytic lesion
14	Joint	DS	Ankle	Disease directly	Leukemia expansion

Involved apparatus: CNS: central nervous system; PNS: peripheral nervous system.
Pain type: DS: deep somatic; V: visceral; MS: mixed somatic; N: neuropatic.