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BREAKTHROUGH-PAIN LIKELIHOOD IN CANCER PATIENTS:
AN IMPACT STUDY OF A NOVEL SCORING SYSTEM

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Aim of Investigation:

Breakthrough Cancer pain (BTcP) shows prevalence variability and challenging management. We report preliminary results of an impact multicenter (9) study of the novel Scoring System (SS) based on a validated diagnostic/prognostic tool, the **IQ-BTP**, for BTcP recognition and likelihood (**High, Intermediate, Low**) estimation (Fig. 1).[1,2]

We have planned to establish among patients with potential BTcP the prevalence of its High, Intermediate and Low likelihood and the feasibility/reliability of the SS.

Methods:

We administered the IQ-BTP SS at three consecutive visits to n = 280 patients. Inclusion criteria: cancer patients with chronic pain aged ≥18 years. Studied variables were: demographics, disease-related information, pain therapy, Brief Pain Inventory (BPI) and, physician concordance (χ^2) with, and appreciation of the SS for BTcP treatment.
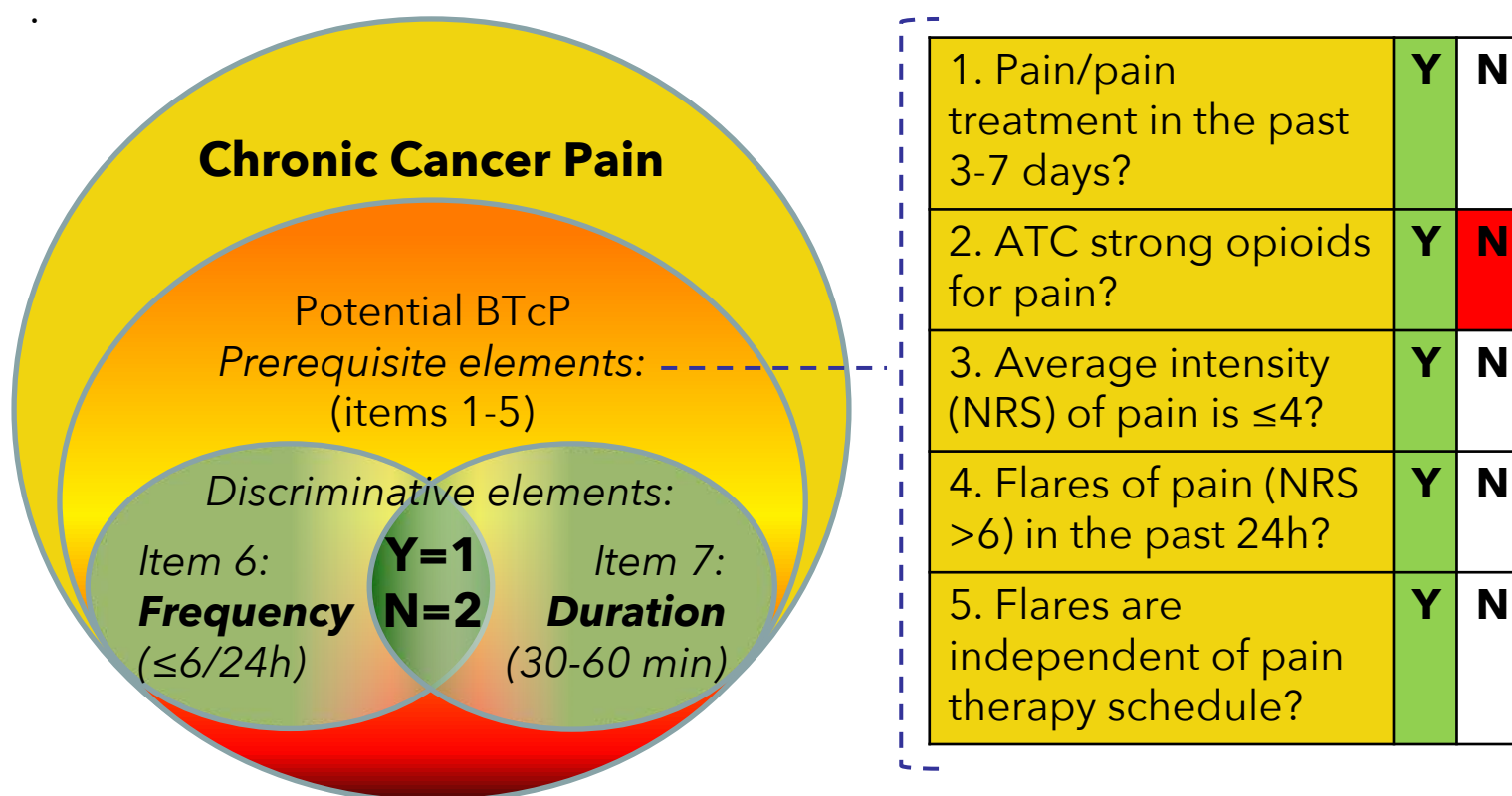

Fig. 1. Scoring System Rationale and major elements.
Discrimination: 2=High, 3=Intermediate, 4=Low likelihood

Chronic Cancer Pain
Potential BTcP
Prerequisite elements: (items 1-5)
Discriminative elements:
Item 6: **Frequency** (≤6/24h)   **Y=1 N=2**   Item 7: **Duration** (30-60 min)

	Y	N
1. Pain/pain treatment in the past 3-7 days?	Y	N
2. ATC strong opioids for pain?	Y	**N**
3. Average intensity (NRS) of pain is ≤4?	Y	N
4. Flares of pain (NRS >6) in the past 24h?	Y	N
5. Flares are independent of pain therapy schedule?	Y	N

Fig. 3. BTcP Likelihood prevalence (%).
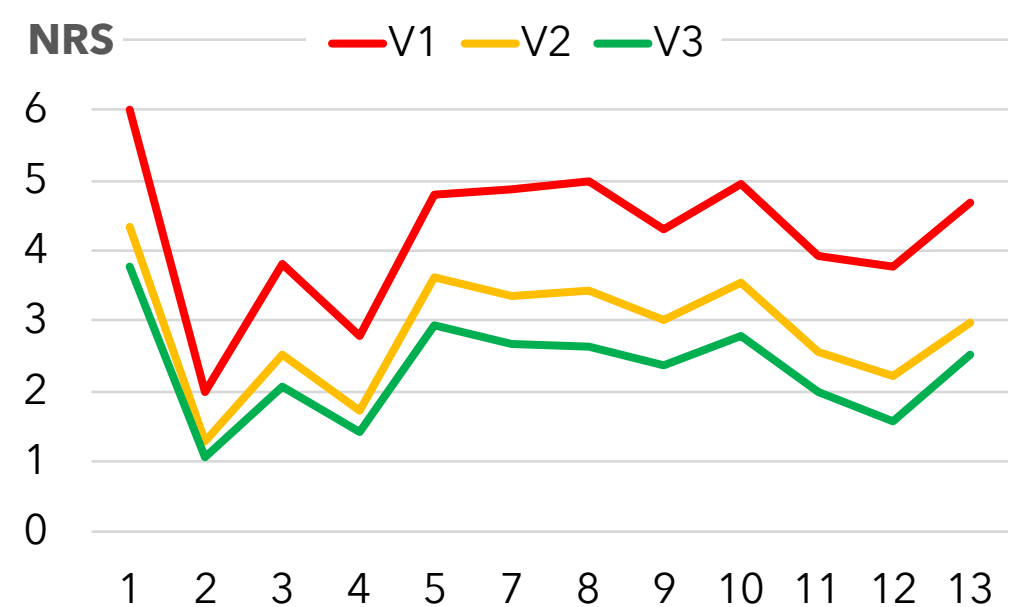
Fig. 4. BPI items' mean scores from V1 to V3.

Results:

1. Of the nine centers, **31%** of patients were recruited in an 'Oncology office' (Fig.2). The mean age of the sample was **67,3** (±13,6) years, range (23-94); **53%** were females. At V1, **84%** had metastases, and mean Karnofsky score was **67,6** (±21.7). The most frequent primitive tumor (17%) was in the **lungs** (Table 1).

2. In Visits #1, 2 and 3, respectively, 'potential BTcP' was found in **25, 29** and **27%** of the patients; of these, respectively, BTcP was of **high** (13, 14, and 18%), **intermediate** (10, 13, and 9%) and **low** (3, 3, and 2%) likelihood (Fig. 3).

3. BPI items' scores significantly improved from Visits #1 to #3; respectively, also patients' satisfaction of the applied pain therapy improved from **57** to **82**% (Fig. 4).

4. The SS was considered 'useful'/'very useful' in diagnosing and managing BTcP by **roughly 90%** of the physicians (Fig. 5.) with significant concordance between the SS results and the physician empirical opinion (χ^2, p<0.001) .
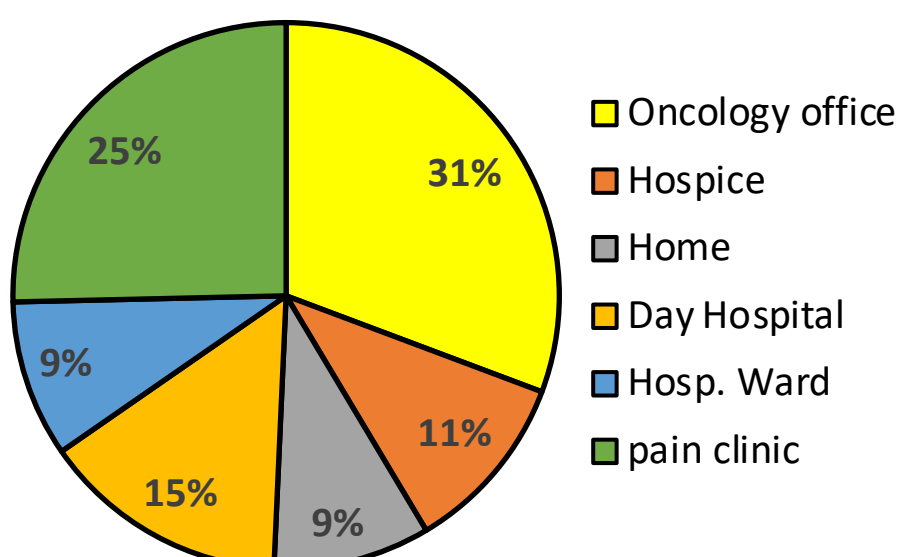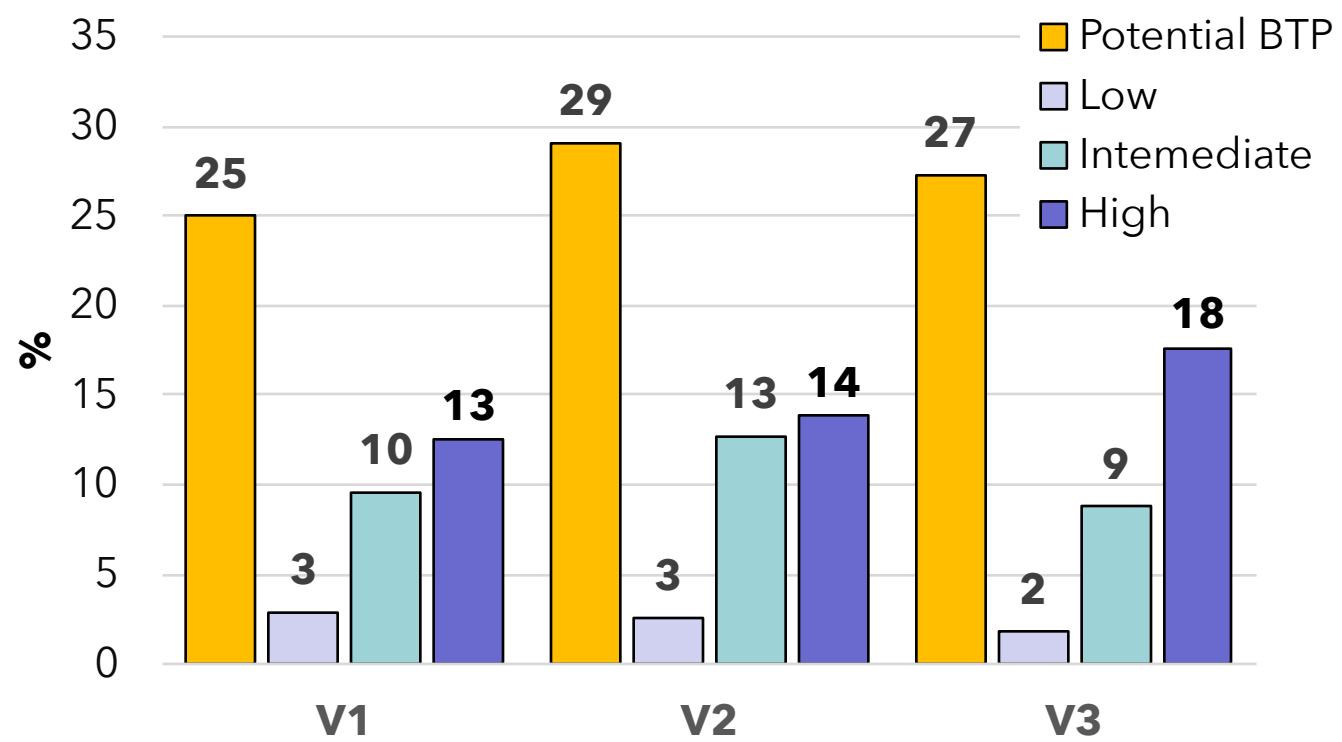

Fig. 2 Recruiting facilities

Oncology office 31%
Hospice 11%
Home 9%
Day Hospital 15%
Hosp. Ward 9%
pain clinic 25%

Fig. 5. Physicians' appreciation of the SS.

Don't know 3%
not at all 4%
a bit 6%
usefull 48%
very usefull 39%

Discussion:

The appropriate management of BTcP requires correct identification. Based on risk/likelihood features, prognostic information can influence clinical decisions, patient outcomes, and cost-effectiveness of care.

The IQ-BTP and its SS can estimate the prognostic concepts of potential-BTP and the 'High,' 'Intermediate' and 'Low' likelihood for BTcP presence.

It is reasonable to speculate that for potential BTcP of 'high' likelihood the correct treatment would be ROO; 'intermediate' or 'low' likelihood impose careful evaluation of the opportunity to use SAO or to improve the ATC opioid regimen, respectively.

Conclusions:

The IQ-BTP, with its SS, shows adequate feasibility enabling the detection of potential-BTP and its likelihood. The latter may have significant relevance to BTcP epidemiology and management.

1. Samolsky Dekel BG et al. Development, validation and psychometric properties of a diagnostic/prognostic tool for breakthrough pain Clin Neurol Neurosurg. 2016;
2. Samolsky Dekel BG et al. Development and performance of a diagnostic/prognostic scoring system for BTP pain. J Pain Res. 2017.