Integrative Review of a Common Symptom Cluster in Cancer Patients: Pain, Fatigue, and Insomnia

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Background

- Majority of cancer cases in the US involve solid tumors (breast, colorectal, lung, & prostate) (CDC, 2009)*
- Pain, fatigue, and insomnia (PFI) is the most prevalent and undermanaged symptom cluster in patients with solid tumors (Thoron, et al., 2010)*
- PFI symptom cluster is biologically linked through pro-inflammatory cytokines (Miaskowski, et al., 2012)*

Purpose

- Examine the state of the science concerning the symptom cluster, pain (P), fatigue (F), and insomnia (I) in patients with solid tumors and identify gaps in literature.

Methods

- Databases: PubMed, CINAHL, PsycINFO
- Keywords: MESH terms for: Sleep, sleep disorders, pain, fatigue, breast cancer, colorectal cancer, lung cancer, prostate cancer
- Limitations: English, all adult, human subjects

Sample

- Sample Size (n) = 3295
- Age (mean) = 65.57
- Gender (n): Male = 760, Female = 2035
- Race (n): Caucasian = 1073, African American = 305, Hispanic = 173, Asian = 143, Indian = 1, Unknown = 404
- Type of Cancer (n): Breast = 2110, Lung = 614, Prostate = 210, Colorectal = 281
- Cancer Stage (n): Early Stage = 1851, Advanced stage = 1084, Unknown = 586

Valid & Reliable Instruments

- MDASI: M. D. Anderson Symptom Inventory – 19 items (0 [not present] – 10 [worse]) NRS* 1. “Your pain at its worst?”
- EORTC-QOL: Quality of Life – 30 items, 1 [not at all] – 4 [very much] NRS converted to 0 – 100 3. “Have you had trouble sleeping?”

Findings in Cross-sectional Studies (n = 13)

- Pain Mean: 2.2(1.7), Range: 1.3 – 4.4
- Fatigue Mean: 4.2(1.7), Range: 1.5 – 5.8
- Insomnia Mean: 4.2(1.2), Range: 1.7 – 5.4

Findings in Longitudinal Studies (n = 5)

- Pain Mean: 2.3(1.4), Range: 1.3 – 5.4
- Fatigue Mean: 3.4(1.5), Range: 2.3 – 5.1
- Insomnia Mean: 2.5(1.2), Range: 1.4 – 5.3

Findings in Intervention Studies (n = 3)

- Yoga:
  - All symptoms increased during chemotherapy, especially fatigue.
  - Fatigue and insomnia scores paralleled each other over time.
  - Pain only symptom to return to baseline

- Hypnosis:
  - PFI co-occur across patients with solid tumors
  - Majority of patients with solid tumors have moderate to severe symptom scores which negatively impact quality of life
  - Complementary and alternative medicine treatment seem promising for PFI symptom management but more research is needed
  - Research is needed to identify the biological mechanism underlying these relationships

Conclusions

- All interventions reduced symptom severity in the short term, however long term effects are unknown

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*All studies are observational, cross-sectional, or case series; some studies did not report gender, ethnicity, lung, or prostate treatment.

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*Fatiage and insomnia scores paralleled each other over time.

*Pain only symptom to return to baseline