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Introduction

A considerable majority of individuals diagnosed with cancer grapple with persistent pain [1]. This pain often falls into the nociceptive category, necessitating the use of opioid analgesics for effective treatment [2]. Alternatively, neuropathic pain may require the administration of anticonvulsant or antidepressant medications [3,4]. Complicating matters further, many patients experience a combination of both nociceptive and neuropathic pain, presenting a challenge in pain

oral, parenteral, or intrathecal administration as viable options. Despite these treatments, some patients endure nociceptive pain resistant to morphine, while others grapple with side effects despite ongoing treatment. Similarly, managing certain types of neuropathic pain may demand substantial doses of anticonvulsants and antidepressants, leading to pronounced sleepiness and further compromising the patient's overall quality of life. For terminally ill patients contending with mixed pain, the amalgamation of various treatment classes often results in significant sleepiness and a discernible decline in their quality of life [10]. Consequently, pursuing personal or family projects under such circumstances becomes exceedingly challenging, if not impossible. Noninvasive brain stimulation via repetitive transcranial magnetic stimulation (rTMS) emerges as a novel approach to pain management. Our previous study demonstrated the positive impact of motor cortex stimulation through rTMS on non-cancer pelvic pain. Integrating rTMS as adjuvant therapy within a multidisciplinary treatment framework offered by palliative care units holds promise as a potentially beneficial strategy with a favorable benefit-to-risk balance. Research indicates that rTMS is effective in addressing depression and chronic pain, particularly of neuropathic origin. The focus of treatment for chronic pain is the precentral motor cortex rather than somatosensory cortical regions. Despite initial skepticism, numerous studies have underscored the efficacy and mechanisms of action of both invasive and noninvasive