

Peripheral Neuropathy

Comparison of symptoms and severity between colorectal cancer survivors and patients with diabetes

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BACKGROUND: Peripheral neuropathy (PN) is a common symptom in colorectal cancer (CRC) survivors and patients with diabetes. However, the differences in PN symptoms between CRC survivors and patients with diabetes are not clear.

OBJECTIVES: The purpose of this study was to examine the differences in PN between CRC survivors and patients with diabetes.

METHODS: Secondary data were analyzed from two cross-sectional studies consisting of 81 CRC survivors and 86 patients with diabetes from two hospitals in northern and central Taiwan. Data were analyzed using descriptive statistics, analysis of covariance, and multiple logistic regression.

FINDINGS: Significant differences in severity and prevalence of PN and neuropathic pain between CRC survivors and patients with diabetes were found. Patients with diabetes had significantly more severe PN and sensory PN compared to CRC survivors. In addition, the prevalence of PN and neuropathic pain was significantly higher in CRC survivors compared to patients with diabetes after control of covariates.

KEYWORDS

peripheral neuropathy; neuropathic pain; colorectal cancer survivors; diabetes

DIGITAL OBJECT IDENTIFIER

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PERIPHERAL NEUROPATHY (PN) OCCURS WHEN A NERVE IS INJURED in an extremity. The Foundation for Peripheral Neuropathy (2021) states that 30 million Americans suffer from PN annually. The most common causes of PN are chemotherapy treatment and diabetes (National Health Service, 2019). PN symptoms present differently among diseases because of variations in mechanisms and nerves damaged. The prevalence of chemotherapy-induced PN (CIPN), reported to be from 19% to 85%, is related to drug and dose (Staff et al., 2017; Zajączkowska et al., 2019). Platinum-based chemotherapy is the standard treatment for colorectal cancer (CRC) survivors, and the prevalence of CIPN for that population is 94% during treatment and 64% after treatment (Soveri et al., 2019). The prevalence of diabetic PN (DPN) is 6% for newly diagnosed patients with diabetes and 50%–60% for patients 25 years after their diabetes diagnosis (Hicks & Selvin, 2019). DPN is a microvascular disease, caused by poor sugar control, which leads to vascular sclerosis. The nerve cells do not receive enough glucose and oxygen because of a reduction in blood flow (Hershey, 2017). Both CIPN and DPN have an effect on patients' physical and psychosocial functioning, sleep, quality of life (QOL), safety, and survival (Girach et al., 2019; Iqbal et al., 2018).

CIPN may last for a short time, for a few years after cancer treatment, or it may be permanent. The sensory symptoms are obvious and occur in the extremities, such as fingers or toes, and include stocking-glove pattern distribution, resulting in sensory dysfunction, dullness, itching, numbness, electric shock, and pain. When the autonomic nerve is damaged, the symptoms include abnormal thermoregulation, constipation, and postural hypotension. When the motor sensory nerve is attacked, a decline in muscle power, coordination and sense of position, and balance, as well as deep tendon reflex (DTR), are observed (Doughty & Seyedsadjadi, 2018; Zajączkowska et al., 2019). In CIPN, sensory PN is the most commonly presented PN symptom (98%–100%) (Banach et al., 2018; Vinik, 2016). The incidence of motor PN (15%–19%) and autonomic PN (2%–5%) are relatively rare compared to sensory PN during chemotherapy (Bonhof et al., 2020; Miltenburg & Booger, 2014; Pereira et al., 2016; Rivera et al., 2018). Therefore, educating patients to monitor symptoms of sensory PN is important for the early detection of CIPN. CIPN causes discomfort in patients, resulting in a need for reduction