Partial Breast Irradiation

A longitudinal study of symptoms and quality of life

Mary Lou Siefert, DNSc, APRN, AOCN®, Kristopher Fennie, PhD, MPH, MSc, and M. Tish Knobf, PhD, RN, AOCN®, FAAN

BACKGROUND: In many women with early-stage breast cancer, breast-conserving surgery (BCS) with partial breast irradiation (PBI) has similar overall survival and local recurrence rates compared to BCS with whole-breast irradiation (WBI). A better understanding of the quality of life (QOL) outcomes during and following BCS with PBI versus BCS with WBI is needed.

OBJECTIVES: This study was conducted to examine symptoms, symptom distress, cosmesis, QOL, and perceived body image in women during and after BCS with PBI.

METHODS: A convenience sample of 31 women completed self-reports pre- and post-PBI over six months. Descriptive statistics and repeated-measures analysis were performed at baseline and three times post-PBI.

FINDINGS: Most women reported satisfaction with body image and good QOL, despite a small decline in social well-being. Fatigue and mild to moderate symptom distress persisted over time.

WITH MORE THAN THREE MILLION BREAST CANCER SURVIVORS, it is necessary to identify and understand treatment-related sequelae that affect quality of life (QOL) as therapy evolves (National Cancer Institute, 2016). Radiation therapy with breast-conserving surgery (BCS) has been an equivalent alternative to mastectomy for regional control of the cancer (Fisher et al., 1995; National Institutes of Health, 1991; Veronesi et al., 2001). Whole-breast irradiation (WBI) has been the predominant approach, but the treatment schedule for WBI (i.e., five days per week for six weeks) can be challenging; as a result, some women chose mastectomy as the primary breast therapy (Katie Lee & Knobf, 2015; Lee & Knobf, 2016). Compared to mastectomy, BCS with WBI may be associated with increased use of resources and may negatively affect overall QOL (Kawase et al., 2012; Shah, Lanni, et al., 2013; Whelan, Levine, Julian, Kirkbride, & Skingley, 2000).

Partial breast irradiation (PBI) was explored as an alternative to WBI in an effort to deliver irradiation to a limited area of the breast area near the original tumor site (Swanson & Vicini, 2008) and was found to provide equal benefit, fewer side effects, and improved QOL (Gage et al., 1995; Polgár et al., 2007, 2017; Shah, Vicini, Wazer, Arthur, & Patel, 2013; Smith et al., 2009; Smith, Lee, Turner, Carter, & Haffty, 2000).

In the postoperative period following BCS, accelerated PBI using brachytherapy or 3DCRT is typically delivered in high-dose fractions twice daily for about five days (Njeh et al., 2010; Shah, Lanni, et al., 2013; Shaitelman & Kim, 2013; Skowronek et al., 2012; Swanson & Vicini, 2008). Effectiveness, risk, and side effect profile are still under investigation for intraoperative accelerated PBI (Correa et al., 2017).

In 2009, the American Society for Radiation Oncology (ASTRO) issued a consensus statement with recommendations for use of PBI (Smith et