Oxaliplatin

Detection and management of hypersensitivity reactions

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BACKGROUND: Oxaliplatin is used extensively for the treatment of gastrointestinal cancer and other malignancies, with increased frequency of use in recent years. Hypersensitivity reactions (HSRs) can pose a major problem in clinical practice because they can affect the use of oxaliplatin in the care of malignancies in which it has proven efficacy. Nurses play an integral role in the administration of oxaliplatin; therefore, they need to be well educated in the prevention, detection, and management of HSRs.

OBJECTIVES: This article reviews the symptoms of HSRs associated with oxaliplatin, the specific management of HSRs associated with oxaliplatin, the role of desensitization, and the potential use of skin testing to better identify patients at risk for HSR.

METHODS: This article reviews the literature related to the diagnosis, prevention, and management of HSRs associated with oxaliplatin and outlines nurses’ role.

FINDINGS: Oxaliplatin HSRs can occur at any cycle, but patients are at highest risk after they have received six prior infusions of oxaliplatin.

KEYWORDS
hypersensitivity reaction; oxaliplatin; infusion reaction

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Oxaliplatin is an alkylating agent that interacts with DNA to form intrastrand/interstrand DNA crosslinks that affect DNA base pairing, replication, and gene transcription, ultimately causing cell death (Kim et al., 2012). This cytotoxic agent is used extensively for the treatment of gastrointestinal and gynecologic cancers, and its use has been increasing during the past decade (Okayama et al., 2015). Despite wide-ranging activity in a variety of cancers, oxaliplatin treatment can be limited by several toxicities, most commonly peripheral sensory neuropathy, cytopenias, gastrointestinal toxicity, fatigue, and the potential for HSRs (Sanofi-Aventis, 2015). In the management of gastrointestinal malignancies, not a lot of equivalent agents with different or decreased toxicity can be used instead of oxaliplatin (Parel et al., 2014). How often oxaliplatin is discontinued because of an HSR is not well known, because not all studies report the discontinuation rate; however, some studies have reported an approximate discontinuation rate of 21% (Yanai et al., 2012). Without many equivalent agents that can replace oxaliplatin in treatments for patients, the occurrence of HSRs can have a huge impact on the care of patients with gastrointestinal cancers.

The overall incidence of oxaliplatin HSR ranges from less than 2% to 25% in various studies and does not appear to be associated with a particular oncologic diagnosis (Brandi et al., 2003; Gowda, Goel, Berdzik, Leichman, & Javle, 2004; Okayama et al., 2015; Shibata et al., 2009). The incidence of reactions to oxaliplatin is increasing at a rate parallel to that of the increased use of oxaliplatin (Brandi et al., 2003; Lee et al., 2007; Maidrauff-Goebel et al., 2005). The risk of grade 3–4 reactions is about 1.6%, whereas life-threatening reactions occur in about 1% of cases (Joerger, 2012; Parel et al., 2014).