Relative Dose Intensity: Improving Cancer Treatment and Outcomes

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Relative dose intensity is a term that refers to the amount of a particular chemotherapy given over a specific time (i.e. paclitaxel 175mg/m2 every three weeks) in relation to what was ordered (or is considered standard). The patient may be originally ordered 175mg/m2, but due to toxicities have a dose reduction or skip a dose, altering the total amount of chemotherapy they receive. Studies have shown that receiving less than standard doses leads to poorer outcomes. How many practices know the RDI their patients are receiving or give much thought to dose reductions or delays? Cheryl Lenhart and her colleagues spent several months training staff in the theory of RDI, developing data collection sheets to allow them to accurately look at their practice – and they were stunned by what they found. The doctors and nurses involved did not think poor RDI was an issue they had in their practice, but their first quarter of data collection showed otherwise: only 27% of patients adhered to the schedule set by the physicians, and 82% adhered to the planned doses. Patient cancellation of appointments (by patient, family or MD) was a big factor, and they resolved this by not pushing those patients to the next week, but instead to the next day. They also determined that dose reductions were often performed without attempting to use a growth factor to prevent the reduction. They found that the nursing staff was unfamiliar with RDI, and patients did not understand the importance of keeping on schedule. The practice undertook a large education initiative, teaching nurses about RDI, their critical role as patient advocates, and educating their patients on the importance of the schedule. Their progress, after one year of the nursing staff playing advocate with the physician groups, is very encouraging. They have had a 50% reduction in cancellations – I am sure educating patients on the importance of schedule and dosing accounts for a big part of this. They have seen a 25% increase in the use of growth factors to prevent neutropenia, and are now above the 50th percentile for patient compliance with regimens.

This is unarguably a huge undertaking, but the implications for improving patient outcomes makes it all worth it. This practice may have been surprised to see how far they were from administering the planned doses, but I am sure they are not alone. Nurses may want to consider a small pilot version of this in their own institution to see where they are and to perhaps call attention to the issue.