Quality Review of Irradiated Cellular Blood Product Orders

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Background

Transfusion-associated graft-versus-host disease (TA-GVHD) is an immunological response between a donor’s transfused T cells and the recipient’s immune defense. The risk of TA-GVHD increases with relatively large transfusions of lymphocytes (e.g., transfusion in infants or granulocyte transfusion) or immunocompromised individuals. The risk of TA-GVHD is mitigated by irradiating cellular blood components to prevent donor T lymphocyte proliferation.

Irradiation of cellular blood components is managed differently amongst institutions. Factors to consider in the irradiation process include technologist time, technologists prepare and perform irradiation of the cellular blood products. This can be a labor intensive process. Cost is another factor that includes the cost of the irradiation indicators that are placed on the units and the labor in providing this service. Irradiation also shortens the shelf life of the cellular blood component to 28 days. If the shelf life was less than 28 days then irradiation does not extend the shelf life to 28 days (e.g. shelf life 14 days, post-irradiation remains 14 days). At Thomas Jefferson University Hospital, the Blood Bank irradiates blood products only upon request, then sent on February 27, 2017.

Interventions to Decrease Inappropriate Orders

Two interventions were undertaken to decrease the number of inappropriate irradiation orders.

A polite and professional email was sent to the clinicians who submitted the inappropriate irradiation orders from July 2016 to March 2017. The email informed the clinicians that they submitted an inappropriate irradiation order, provided them with a table of irradiation blood product indications, and additional resources. This email was sent on February 27, 2017.

A pocket card was also created. The card contained a table of indications for irradiated cellular blood products and contact information for the Jefferson Blood Bank to distribute on June 13, 2017 to Internal Medicine house staff.

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Review of Inappropriate Orders

Irradiated blood product orders flagged for medical coverage review from July 2016 to March 2017 revealed 34 of the 55 orders were inappropriate. For each incorrect order, clinician name, clinician service, hospital unit, transfusion indications, and reason for irradiation were recorded. The inappropriate orders were submitted by 31 clinicians between March 1, 2017 and May 1, 2017, two orders for irradiated cellular blood therapy. Some clinicians accidentally requested irradiated cellular blood products.

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Between March 1, 2017 and May 1, 2017, two orders for irradiated cellular blood products were flagged for medical coverage review. In one of those requests, irradiated cellular blood products were not indicated.

Irradiated Blood Products

Irradiated blood products are not indicated. Between March 1, 2017 and May 1, 2017, two orders for irradiated cellular blood products were flagged for medical coverage review. In one of those requests, irradiated cellular blood products were not indicated.

Report

The preliminary post-intervention data may not be representative since residents gain experience during the year.

Only one of inappropriate orders were reviewed.

References


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