Understanding Side Effects and Immune Related Adverse Events (IrAEs) of Cancer Therapies

Susan Hampton-Ash, MSN, RN, FNP-BC, OCN

**BACKGROUND**
- Adverse effects of cancer therapies vary based upon the drugs and treatment modalities used.
- Side effects/adverse events associated with chemotherapy are much different than immune related adverse events (IrAEs).
- The major adverse events associated with immunotherapy are ‘itis’ which may mimic signs associated with neutropenic-associated infection.
- Early recognition of adverse events leads to improved outcomes and decreased hospitalizations.

**PROBLEM STATEMENT/PURPOSE**
- Many patients receive immunotherapy as a part of their cancer treatment.
- Earlier research conducted at St. Joseph Hospital Orange identified nursing knowledge deficits regarding immunotherapy and IrAEs.
- This project measures the efficacy of micro-education as an effective method to educate nurses about IrAEs.

**REFERENCES**
References available upon request: Susan.Hampton-Ash@stjoe.org

**METHODS**
- Design: Evidence-based quality improvement project.
- Sample: Inpatient/Outpatient Oncology & float Pool RNs.
- Methods:
  - Identical pretest/posttest.
  - Pretest measures nursing knowledge of immunotherapy versus chemotherapy.
  - Microteaching: focusing on immunotherapy’s method of action and differentiating between adverse events associated with chemotherapy versus immunotherapy.
  - Posttest immediately after teaching.

**RESULTS**

<table>
<thead>
<tr>
<th></th>
<th>Pre N = 29</th>
<th>Post N = 29</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the side effects of chemotherapy the same as the adverse events of immunotherapy?</td>
<td>27.6% (8)</td>
<td>69.0% (20)</td>
<td>.001</td>
</tr>
<tr>
<td>Are you familiar with the drug used to manage moderate to severe cases of immune related adverse events (IrAE’s)?</td>
<td>48.3% (14)</td>
<td>48.3% (14)</td>
<td>.060</td>
</tr>
<tr>
<td>Are you comfortable recognizing side effects/adverse events on patients who are/have been on treatment for cancer?</td>
<td>75.9% (22)</td>
<td>20.7% (6)</td>
<td>.083</td>
</tr>
</tbody>
</table>

**RESULTS (continued)**
- Correct number of chemotherapy side effects / adverse effects from cancer treatments pre-education: mean of 3.7 (SD = .6), post-education: mean 3.9 (SD = .3). p < .0001.
- Correct number of immunotherapy side effects / adverse effects from treatments pre-education: mean of .03 (SD = .2), post-education: mean 0.07 (SD = .3) p < .0001.

**CONCLUSIONS**
- Oncology nurses were knowledgeable about side effects of chemotherapy before education but benefited from microteaching about IrAEs.
- Education specific to immunotherapy and IrAEs is essential for any RN who may be caring for a patient who is receiving immunotherapy.
- Extend teaching about IrAEs to include inpatient nurses throughout the hospital.