Aug 23rd, 9:00 AM

Wilms Tumor Survivorship: Does Childhood Cancer Treatment Predict Late-Term Adverse Effects?

Ava Bibergal
avarene@gmail.com

Follow this and additional works at: https://via.library.depaul.edu/nursing-colloquium

Part of the Nephrology Commons, Nursing Commons, Oncology Commons, and the Radiation Medicine Commons

https://via.library.depaul.edu/nursing-colloquium/2019/summer/24

This Event is brought to you for free and open access by the School of Nursing at Via Sapientiae. It has been accepted for inclusion in Grace Peterson Nursing Research Colloquium by an authorized administrator of Via Sapientiae. For more information, please contact wsulliv6@depaul.edu, cmcclure@depaul.edu.
Wilms Tumor Survivorship: Does Childhood Oncology Treatment Predict Late Term Adverse Effects?

Ava Bibergal
DePaul University

Abstract

Wilms’ tumor is the leading cancer to affect the kidneys in children between the age of 3-5 years old. While oncology treatments including chemotherapy and radiation uphold at 90% success rate at eradicating the cancer, research suggests that a similar statistic of these survivors experience late-term adverse affects related to therapy such as heart disease, psychological and developmental delays, and secondary malignancies. Research concluded that late-term adverse effects are most commonly attributed to radiation therapy and the use of doxorubicin, a cardio toxic chemotherapeutic agent. This research review indicates a more in-depth review of necessary follow-up care for childhood cancer survivors, as well as determination of necessary life screenings and early detection for secondary malignancy survivors, as well as determination of necessary life care related to chronic disease, as well as the importance of life-long compliance to follow up care.

Research Questions

• Do childhood Wilms’ tumor survivors that received radiation and chemotherapy commonly develop late-term health problems?
• Do childhood Wilms’ tumor survivors that received radiation therapy experience more recurrences of cancer when compared to the incidence of chronic diseases in these patients?

Purpose

• To further examine late-term adverse effects of childhood cancer treatment
• To educate nurses and practitioners on the importance of emphasizing compliance

Introduction

Research of Wilms Tumor predominantly suggests that chemotherapy and radiation are 90% effective to successfully eradicate the disease and thus provide a good prognosis for patients. While patients and families can be reassured by this high statistic, research emphasizes the importance of life-long screening and follow-up care related to chronic conditions and secondary malignancies that can arise as late-term adverse effects to childhood cancer treatment.

Theoretical Framework

The Roy Adaptation Model

Assumptions:

• Identifies individuals as biopsychosocial beings
• Continuous interaction with changing environment
• Coping skills used in changing environment are both innate and acquired
• In order to respond adequately to change, a person must adapt
• Evaluates patient in the following modes: Physiologic, self-concept, role function, interdependence

Health:

• Represented by a health-illness continuum
• Process of being and becoming integrated as a whole

Nursing:

• Promote adaptation
• Assessing behaviors and factors that influence ability to adapt
• Intervene to enhance coping skills and ability to adapt

Methods

• Literature Review consisting of books, scholarly articles, and sources relevant to the topic of research

Inclusion Criteria

• Peer-reviewed scholarly articles
• Population: Wilms tumor survivors who were diagnosed under the age of 10
• Key words: Wilms’ Tumor

Limitations

• Lack of recent studies
• Lack of specificity within studies

Implications

• Educate nurses and members of the healthcare team about possible late-term adverse effects of childhood cancer treatment
• Educate patients and families about life-long compliance to healthcare

Conclusion

• Future effects of childhood cancer treatments were evaluated
• Research determined that emphasis on life-long compliance with healthcare is necessary in order to prolong life and quality of life
• Roy’s Adaptation Model was integrated into the research question and purpose in order to better organize concepts for nurses and patients
• Nurses and other members of the healthcare team are indicated to emphasize the importance of life-long compliance for Wilms’ tumor survivors

Following this literature review, nurses and members of the healthcare team are encouraged to stay up to date on research regarding the late-term effects of childhood cancer survivors.

Abstract

The importance of emphasizing compliance

Figure 1: Summary of Studies Relating to Wilms Tumor Treatment Late-Term Effects

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Study Type</th>
<th>Subject Studied</th>
<th>Sample Size</th>
<th>Age of Subjects</th>
<th>Incidence of chronic late-term adverse effects (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breslow et al.</td>
<td>Descriptive</td>
<td>Wilms’ tumor survivors developing secondary tumors</td>
<td>n=13,351</td>
<td>≤15 years of age</td>
<td>5.1% developed secondary tumors</td>
</tr>
<tr>
<td>Termuhlen et al.</td>
<td>Retrospective</td>
<td>Wilms’ tumor survivors in comparison to a sibling cohort</td>
<td>Survivor cohort: n=1256</td>
<td>≤18 years of age</td>
<td>Survivor cohort: 65.4% developed chronic diseases</td>
</tr>
<tr>
<td></td>
<td>cohort study</td>
<td></td>
<td>Sibling cohort: n=4023</td>
<td></td>
<td>Sibling cohort: 24.2% developed chronic diseases</td>
</tr>
<tr>
<td>Lange (2014)</td>
<td>Descriptive</td>
<td>Female Wilms’ tumor survivors who received radiotherapy</td>
<td>n=2492</td>
<td>&gt;15 years of age</td>
<td>14.8% of survivors developed breast cancer</td>
</tr>
<tr>
<td>Armstrong et al.</td>
<td>Retrospective</td>
<td>Survivors of childhood cancer who were diagnosed before the age of 21 who were alive 5 years after diagnosis</td>
<td>n=34,033</td>
<td>All ages participated, diagnostic age ≤ 21 years of age</td>
<td>41% of deaths were attributed to health-related causes such as subsequent malignancies, cardiac problems, or pulmonary problems</td>
</tr>
<tr>
<td>Foster et al.</td>
<td>Descriptive, parent-reports</td>
<td>Psychological and educational problems among Wilms’ tumor survivors compared to sibling</td>
<td>n=666</td>
<td></td>
<td>8.4% of survivors reported need for psychoactive medication (vs. 5.1% of siblings)</td>
</tr>
<tr>
<td>Castellanos-Toledo et al.</td>
<td>Retrospective</td>
<td>Wilms tumor survivors</td>
<td>n=48</td>
<td>6 months–8 years of age</td>
<td>18.4% of survivors developed chronic conditions 2% doxorubicin-induced late cardiotoxicity 8.3% radiotherapy related musculoskeletal disorders</td>
</tr>
</tbody>
</table>