Experiences from the Cardio-Oncology Clinic at South Health Campus

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Background
Cardio-Oncology is an emerging subspecialty that aims to support patients undergoing cancer treatment at higher risk of cardiotoxicity through detection, prevention and treatment. The Cardio-Oncology Clinic at South Health Campus (SHC) has provided care for over 1000 patients since its formation in 2013. A multidisciplinary team of cardiologists, nurse clinicians and a pharmacist collaborate with patients and families to identify and manage cardiac risk factors: assess the cardiac risk of cancer treatment, monitor for cardiotoxicity during and after cancer treatment, and initiate prompt treatment with medications, when indicated.

Screening and Risk Stratification

- **History & physical examination**
- **Cardiac risk factors**: pre-existing cardiac disease, hypertension, diabetes, dyslipidemia, smoking, obesity, sedentary, family history
- **Previous and current cancer treatment**: anthracycline, trastuzumab, tyrosine kinase inhibitors, radiation involving the heart/chest.
- **Age < 18 years and 65 years old (anthracycline) or > 50 (trastuzumab)**
- **Increased BMI (trastuzumab)**
- **Female (anthracycline)**
- **Cardiac biomarkers**: troponin, NT-proBNP
- **Cardiac imaging**: echocardiogram and/or cardiac MRI, occasionally MUGA.

**Surveillance**

- **Initial or repeat Assessment for Cardiac Amyloidosis**
  - Baseline strain ECHO
  - CMR to be performed by cardiologist and/or hematologist
  - Baseline NT-proBNP

- **Patient on treatment – repeat strain ECHO and NT-proBNP 3 months after treatment**
  - Patient not on treatment – repeat strain ECHO and NT-proBNP every 4 months

- **Repeat CMR**
  - For patients with previous cardiotoxic cancer treatment, pre-existing cardiac conditions, lifestyle risk factors
  - Surveillance begins at 2 years after completion of anthracycline-based chemotherapy treatment.
  - Risk assessment: type of cancer treatment and risk of cardiotoxicity, previous cardiotoxic cancer treatment, pre-existing cardiac conditions, lifestyle risk factors
  - Surveillance: based on SHC Cardio-Oncology Clinic specific protocol or as directed by the cardiologist based on the specific needs of the patient

Service Delivery Model

- **Referral triage**: urgent (within 72 hours), semi-urgent (within 5 business days), routine (within 3 weeks)
- **Collaborative practice**: joint patient appointments with cardiologist, nurse clinician and pharmacist; ongoing communication between oncology team and other health care providers involved in the patient’s care; dedicated administrative support
- **Patient and family education**: cardiac risk factors and treatment options, potential cardiac effects of cancer treatment, place of medication therapy and lifestyle recommendations, recognition and management of cardiac symptoms
- **Risk assessment**: type of cancer treatment and risk of cardiotoxicity, previous cardiotoxic cancer treatment, pre-existing cardiac conditions, lifestyle risk factors
- **Telefon and face to face visits**

Approach to Care

1. Identify patients who are at increased risk of developing cardiotoxicity from their cancer treatment.
2. Implement risk reduction strategies such as optimizing management of cardiac risk factors.
4. Manage and support patients with cardiac complications with medications and lifestyle recommendations.
5. Determine surveillance strategy upon completion of cancer treatment.

**Screening and Risk Stratification continued**

- Anthracycline Based Chemotherapy
  - Baseline CMR prior to treatment
  - Repeat CMR every 3 months during treatment
  - NT-proBNP determined at 3 months

- **Adjunct Herceptin or Kadcyla treatment**
  - Baseline CMR prior to treatment
  - Repeat CMR every 3 months during treatment
  - NT-proBNP determined at 3 months

**Surveillance**

- **Unless referral requests a different schedule**

References


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Implications

- **Pharmacist interventions include**:
  - Assisting in the selection and initiation of cardioprotective medications.
  - Assessing for drug interactions and minimizing adverse effects.
  - Titrating medications.
  - Monitoring therapy for efficacy and safety.
  - Providing medication education.

- University of Alberta Doctor of Pharmacy combined research and clinical specialty elective in Cardio-Oncology planned for summer 2017.
- Research will examine referral and prescribing patterns for patients seen in the SHC Cardio-Oncology Clinic for cardiac dysfunction and if improvements in cardiac function and/or cardiac symptoms were observed

Future Directions

- Expansion of clinical services based on the evolving health needs of our specialized patient population.
- Development of clinical care pathways.
- Participation in national research initiatives.
- Implementation and evaluation of validated risk assessment tools, treatment and surveillance strategies.