

POTENTIAL LATE EFFECTS OF CHILDHOOD AND ADOLESCENT CANCER TREATMENT.

Chemotherapy, biotherapy, radiotherapy and surgery used in the management of cancer can lead to long-term adverse health effects which may manifest many years after completion of treatment.

Ongoing screening and management of potential late effects of cancer treatments in long-term cancer survivors is essential to optimise health outcomes.

Long-term survivors of childhood malignancies who have had complex combination chemotherapy and radiotherapy, require shared care or specialist follow up in a Survivorship Clinic.

The long-term health issues associated with the use of non-cytotoxic targeted agents in children are not yet known. Discussion with a paediatric oncology survivorship physician is recommended.

THE RISK AND NATURE OF LATE EFFECTS OF CANCER TREATMENT ARE DEPENDENT ON MULTIPLE FACTORS INCLUDING:

- type and site of cancer treated
- age at time of treatment
- treatment modalities utilised
- amount and combination of treatments administered
- treatment area
- co-existing medical conditions

ALL LONG-TERM CANCER SURVIVORS SHOULD BE ADVISED OF HEALTH OPTIMISATION MEASURES INCLUDING:

- healthy diet and exercise
- maintaining a healthy weight
- limiting sun exposure
- avoidance of smoking, excessive alcohol and illicit drug use
- cancer screening



PSYCHOSOCIAL AND MENTAL HEALTH

Childhood cancer survivors are at greater risk for social, relationship, educational, vocational, financial and mental health difficulties than their peers. Risk factors include diagnosis or treatment for CNS tumours, premorbid learning or emotional difficulties, low income or education, lack of family/community supports, haematopoietic stem cell transplant and younger age at diagnosis. Adverse mental health status in childhood cancer survivors can include low psychological well-being, anxiety, problem behaviours and post-traumatic stress syndrome and other chronic health issues/presentations. Routine screening and a low threshold for support in these areas is recommended. Solo/unaccompanied consultation opportunities should be offered to young people as a matter of best practice and in line with WA Youth Health Policy (WA Youth Health Policy 2018-2023).

RADIOTHERAPY AND SECONDARY MALIGNANCY

Malignancies secondary to radiotherapy may occur in the treatment field. Routine cancer screening should be undertaken in all patients, which includes skin checks, breast cancer screening, thyroid cancer screening, and bowel cancer screening depending on the treated area.

CNS TUMOURS AFTER CRANIAL IRRADIATION

Long-term survivors of brain tumours who have received radiotherapy may be at increased risk of developing meningiomas, cerebral vascular abnormalities and high-grade brain tumours. These patients require ongoing clinical review and early consideration of CNS imaging if symptoms or clinical signs emerge. The routine use of CNS imaging in long-term survivors of childhood brain cancer for this indication is not accepted best practice in Western Australia.

CARDIOVASCULAR RISK FACTORS

Radiotherapy to cerebral, cardiac and other blood vessels may contribute to accelerated atherosclerotic vascular disease. These patients require appropriate proactive treatment or management of co-existing cardiovascular risk factors including obesity, dyslipidaemia, hypertension and smoking status.

CHEMOTHERAPY AND CARDIAC EFFECTS

Anthracycline and related chemotherapy agents (e.g. Doxorubicin, Daunorubicin, Idarubicin, Epirubicin and Mitoxantrone) which are commonly used in haematological and solid malignancies, may cause delayed cardiac function deterioration. There is an additional risk of deterioration in pregnancy due to an increased strain on the heart. Early cardiologist opinion should be sought if routine cardiomyopathy screening has not been performed within 1-2 years of the pregnancy.

INFECTION RISK AFTER SPLENECTOMY

Patients who have undergone splenectomy or have had radiotherapy to the spleen are susceptible to infection with encapsulated bacteria. Early investigation and management of any febrile illness is required, and it is recommended that patients wear or carry a medi-alert bracelet or alert card to inform health professionals of the risk of overwhelming infection. All asplenic patients should receive appropriate immunisation against pneumococcus, meningococcus, HIB annual influenza vaccination and COVID-19 vaccination as indicated on the National Immunisation Program Schedule. Prophylactic antibiotics may also be required (further details are available at spleen.org.au).

PITUITARY ENDOCRINE INSUFFICIENCY

Patients who have received cranial irradiation may be at risk of pituitary endocrine insufficiency which manifests as hypothyroidism, metabolic syndrome, growth hormone deficiency in children, low testosterone in men or premature menopause in women.

Central adrenal insufficiency may become evident at times of physiological stress such as general anaesthesia, and such patients will require pre-operative assessment.

EFFECTS ON FERTILITY

Patients who have received alkylator chemotherapy or pelvic irradiation may be at risk of hypogonadism and infertility. At risk patients should be offered referral to a fertility specialist.

REFERRALS AND SUPPORT SERVICES.

PERTH CHILDREN'S HOSPITAL (PCH)

NEW PATIENT

Non-urgent referrals 1300 551 142

Urgent referrals Urgent referrals must be discussed with a PCH Oncologist (*via PCH switchboard*)
Phone: 08 6456 2222

OR

Children 15 years or younger can be sent directly to PCH Emergency Department (*with results of previous investigations*)

CURRENT PATIENT

Enquiry If you have a patient currently in the care of PCH Oncology, you need to speak directly to their Oncologist (*via PCH switchboard*)
Phone: 08 6456 2222

HISTORIC PATIENT

Enquiry If you have a patient >5 years post-treatment, you can speak with the Paediatric Oncology Survivorship team: Kerrie Graham, Clinical Cancer Nurse or Dr Thomas Walwyn, Medical Lead
Phone: 08 6456 0170 **OR** 08 6456 2222

WA YOUTH CANCER SERVICE

Support for adolescents and young adults aged between 15–25 years who have been diagnosed with cancer and treated in adult hospitals across Western Australia.

Health professional referrals Phone: 08 6383 3416
Email: ayaccs@health.wa.gov.au

MENTAL HEALTH SUPPORT

Kids Helpline 1800 55 1800

Headspace 1800 650 890

Beyond Blue 1300 224 636

Canteen (12–25 years) 1800 835 932

Red Kite (<18 years) 1800 733 548

This resource reflects the current Children's Oncology Group guidelines which are widely recognised across Australia. Clinical guidelines and resources for patients are available at survivorshipguidelines.org.

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Partner:



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