Integrated Management of Post Remission Leukaemia to Optimise Longevity and Enhance Quality of Life: the IMPROVE longitudinal study

Ms Catherine Vassili[1], Dr Catriona Parker[1,2], Ms Anne Hodgson[1], Dr Kirsty Rady[3], Dr Shaun Fleming[1], A/Prof Andrew Wei[4]

[1]Alfred Health, Melbourne; [2]School of Clinical Sciences, Monash University, Melbourne; VIC; [3]Canberra Hospital, ACT; [4]Peter MacCallum Cancer Centre; Walter and Eliza Hall Institute

BACKGROUND

Intensive chemotherapy for newly diagnosed acute myeloid leukaemia and acute lymphoblastic leukaemia is associated with considerable treatment-related morbidity and mortality in the short and longer term, resulting from patient, disease, and treatment factors.

The toxicity of acute leukaemia therapy is well appreciated, and there is increasing interest in understanding the impacts of intensive therapy on physical, psychological, social and financial functioning.

AIM

To implement a longitudinal follow-up program in an acute leukaemia cohort post completion of intensive chemotherapy to:

- improve risk assessment strategies such as appropriate and timely referrals for intervention/s, and
- identify measures which reduce long term complications of chemotherapy.

ELIGIBILITY

- Adults aged ≥18 years with acute leukaemia in complete morphologic remission (CR or CRi) following intensive chemotherapy administered with curative intent.
- Not planned for allogeneic stem cell transplant in first remission.
- Consent to ALLG National Blood Cancer Registry and Alfred Tissue Bank (required for bio specimen collection).

METHOD

- A multidisciplinary team of clinicians, allied health practitioners and a researcher collaborated to establish this program.
- Participants are reviewed 3 monthly for 24 months in conjunction with their standard of care assessments, in a dedicated IMPROVE clinic facilitated by a Nurse Practitioner.
- Health domains assessed are demonstrated in Table 1.
- REDCap Database has been created for data collection.

TABLE 1: Health Domains

HEALTH OUTCOMES

Physical Function
- Physical assessments: Short Physical Performance Battery (SPPB); 6 minute walk test; Grip strength
- IPAQ: The **I**nternational **P**hysical **A**ctivity **Q**uestionnaire

Cardiac
- Annual Transthoracic Echocardiogram
- Cardiac biomarkers

Nutrition and Metabolic
- MUST: Malnutrition Universal Screening Tool
- Endocrine biomarkers

Bone Health
- Screening for osteoporosis & AVN

Neuropathy (ALL only)
- CIPN: Chemotherapy Induced Peripheral Neuropathy Tool (EviQ)

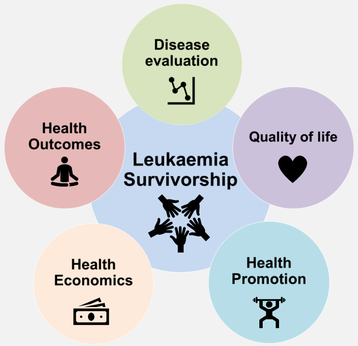
Sexual Wellbeing, Body Image
- CARES survey: **Ca**ncer **R**ehabilitation **E**valuation **S**ystem

Fatigue and Cytokines
- MFI: Multidimensional Fatigue Inventory
- Bio-rad cytokine panel 3 monthly

Immune Function assessments

HEALTH ECONOMICS

Productivity
- WPAI – Work Productivity Activity Index



DISEASE EVALUATION & MRD
- 3 monthly MRD marker assessment if available

Familial Cancer Risk Screening
- University of Chicago Questionnaire

QUALITY OF LIFE

Patient Reported Outcomes of QOL
- FACT-Leu: Functional Assessment of Cancer Therapy- Leukaemia
- EQ-5D: EuroQOL 5 Level Quality of Life

Anxiety/Depression/Distress
- DASS21: Depression, Anxiety and Stress Scale

Financial Stress
- COST-PROM: The Comprehensive Score of Financial Toxicity Patient Reported Outcome Measure

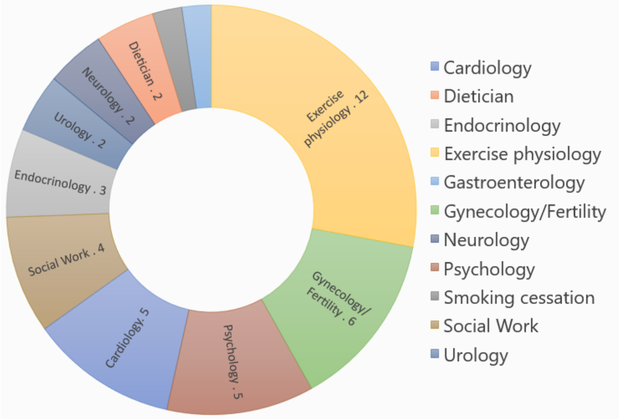
Sleep
- PSQI: Pittsburgh Sleep Quality Index

HEALTH PROMOTION
- Exercise, nutrition, smoking cessation, alcohol consumption
- Age-appropriate health screening
- Seasonal vaccination
- Engagement with GP and community-based programs

TABLE 2: Demographics

Age, years at entry of study	Participants (n=30)
18-39	11
40-59	10
60+	9
Gender	
Female	11
Male	19
Diagnosis	
AML	15
APL	3
B-ALL	9
T-ALL	3

FIGURE 1: Accepted Referrals



CURRENT PROGRESS

- Recruitment commenced in February 2019; to date 30 patients have consented to participate.
- 9 participants have withdrawn; 8 due to disease relapse; 1 patient due to unrelated health reasons.
- Demographic data is demonstrated in Table 2.
- The COVID-19 pandemic and Melbourne lockdowns significantly impacted recruitment and timing of reviews.
- Despite these challenges, many participants have completed multiple visits (>130 total visits to date) and had clinical findings resulting in intervention.
- Accepted referrals are demonstrated in Figure 1.
- The clinic has been positively received with high retention rates.

COLLABORATIVE SUB-STUDY

Since March 2021, 9 participants have partaken in a 3-month individualised exercise program with an exercise physiologist in collaboration with the Baker Institute.

LOOKING AHEAD

- Formal analysis of data is commencing.
- Preliminary findings indicate that a dedicated clinic recognises issues not identified in routine care.
- However, the current format is resource intensive and would be unsustainable for routine implementation.
- After data analysis, it is envisioned that the assessments deemed beneficial will be incorporated as part of an ongoing survivorship clinic.

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