Disclosure

• No conflict of interest to disclose
Outline

• Long-Term Follow-Up (LTFU) at SCCA/Fred Hutch
• Effect of COVID-19 pandemic on LTFU
• Survivorship
  • Fatigue
  • Nutrition
LTFU

• Offer lifelong consultation to approximately 6000 post-transplant patients and their primary providers.
• Collaborative management model between LTFU/patient/primary provider
• Conduct research
• Provide clinical services
Collaborative Management Model

Transplant Center

Patient

Referring Physician

Information

Advice

Information

Advice

Information

Advice
LTFU Survivorship Care Delivery

“Collaborative Management Model”

- Consultation Service
  - Pre-discharge Home LTFU Consultation Clinic (*between days 80-100 post-transplant*)
  - Chronic GVHD Clinic
  - Comprehensive 1-yr post transplant evaluation
  - Telemedicine consultation to patients and primary care providers
Outline

• Long-Term Follow-Up (LTFU) at SCCA/Fred Hutch
• Effect of COVID-19 pandemic on LTFU
• Survivorship
  • Fatigue
  • Nutrition
LTFU and COVID-19 pandemic

March 2020
• Pre-discharge home LTFU consult clinic performed via TeleHealth
• Comprehensive annual evaluations deferred
• Non-urgent chronic GVHD clinics changed to TeleHealth
• Urgent GVHD clinics remained in person.

*Universal masking, symptom screen prior to appt, day of appt*

June 2020
• Pre-discharge home LTFU consult clinic seen in clinic
• Comprehensive annual evaluations resumed in clinic
• Chronic GVHD clinics resumed in clinic.
• TeleHealth clinics remain an option
Outline

• Long-Term Follow-Up (LTFU) at SCCA/Fred Hutch
• Effect of COVID-19 pandemic on LTFU
  • Survivorship
    • Fatigue
    • Nutrition
Morbidity

HCT survivors have higher risk of chronic health problems in comparison with siblings

Relative risk (RR) compared with HCT siblings

<table>
<thead>
<tr>
<th>Chronic problems</th>
<th>RR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>1.88</td>
<td>1.39-2.11</td>
</tr>
<tr>
<td>Grade 3-5</td>
<td>3.52</td>
<td>2.31-5.38</td>
</tr>
</tbody>
</table>

Challenges faced by stem cell transplant survivors involve many systems

Neuropsychologic effects
- Depression, anxiety
- Post-traumatic stress disorder
- Neurocognitive deficits

Pulmonary diseases
- Bronchiolitis obliterans syndrome
- Cryptogenic organizing pneumonia
- Pulmonary hypertension

Kidney diseases
- Thrombotic microangiopathy
- Nephrotic syndrome
- Idiopathic CKD
- Persistent acute kidney injury
- BK virus nephropathy

Iron overload

Bone diseases
- Osteopenia
- Osteoporosis
- Avascular necrosis

Endocrine diseases
- Thyroid dysfunction
- Gonadal dysfunction
- Diabetes
- Dyslipidemia
- Metabolic syndrome
- Adrenal insufficiency

Solid cancers
- Oral cavity
- Skin
- Breast
- Thyroid
- Other sites

Cardiovascular diseases
- Cardiomyopathy
- Congestive heart failure
- Valvar dysfunction
- Arrhythmia
- Pericarditis
- Coronary artery disease

Liver diseases
- Hepatitis B, Hepatitis C, liver cirrhosis
- Nodular regenerative/focal nodular hyperplasia

Gonadal dysfunction/infertility

Infectious diseases
- *Pneumocystis jiroveci*
- Encapsulated bacteria
- Fungi
- Varicella-zoster virus
- Cytomegalovirus
- Respiratory syncytial virus
- Influenza virus
- Parainfluenza virus

Outline

• Long-Term Follow-Up (LTFU) at SCCA/Fred Hutch
• Effect of COVID-19 pandemic on LTFU
• Survivorship

  • Fatigue
  • Nutrition
Cancer-related fatigue

- A distressing, persistent, subjective sense of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning.

- Mild, moderate, severe (scale 0-10)
Cancer-related fatigue: Etiology

- Treatable co-morbidities
  - Endocrine, anemia, cardiac dysfunction, etc.
- Emotional distress
- Medications
- Pain
- Sleep Disturbance
- Nutrition
- Deconditioning
- Chronic GVHD
- Inflammation
Depression and Fatigue: Risk

N=1869

<table>
<thead>
<tr>
<th></th>
<th>Allo (n=663)</th>
<th>Auto (n=666)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mod-severe depression</td>
<td>14%</td>
<td>15%</td>
</tr>
<tr>
<td>Mod-severe fatigue</td>
<td>31%</td>
<td>31%</td>
</tr>
</tbody>
</table>

PROMIS Global Health Physical (GH-Phys) and Social score (GH-Soc) according to history and severity of prior cGVHD history

Cancer-related fatigue: Treatment

• Treat/prevent contributing/underlying factors
• Energy conservation
• Physical activity
• Cognitive Behavioral Therapy
• Nutrition consultation
• Psychostimulants
Outline

• Long-Term Follow-Up (LTFU) at SCCA/Fred Hutch
• Effect of COVID-19 pandemic on LTFU
• Survivorship
  • Fatigue
  • Nutrition
Optimize your nutrition to benefit:

- Cardiac health/metabolic syndrome (dyslipidemia, hypertension, diabetes)
- Bone health (osteopenia, osteoporosis)
- Infection risk
- Recovery
Nutrition: Cardiac Health

- Reduce daily fat intake
- Consume diet rich in omega-3 fatty acids
- Maintain a normal weight
- Consume plant-based foods—keep it colorful!
- Limit processed, high fat, high sugar foods
Nutrition: Bone Health

• Calcium requirement of:
  • 1000-1200 mg/d for M >18 yrs
  • 1000-1200 mg/d for F >18 yrs on HRT
  • 1500 mg/d for F >18 yrs not on HRT
  • 1500 mg/d for M & F >18 yrs on prednisone

• Vitamin D: 1000 IU/d (maintenance) or 50,000 IU/wk if (deficiency)

• Low Na+ diet (<4g/d) while on prednisone
Nutrition: Food Safety

- Raw, undercooked meat, fish, eggs, etc.
- Raw, unshelled nuts, seeds
- Lunch meats unless heated until steamed
- Blue-veined cheese, uncooked soft cheese
- Unwashed raw/frozen vegetables
- Raw honey
- Miso products
- Kombucha

https://www.seattlecca.org/emotional-and-spiritual-support/medical-support-services/nutrition
Nutrition: Recovery

• Increased need to repair damaged tissues, regain strength and sometimes weight.
  • Increase protein (lean meat, dairy products, legumes, nuts, soy)
  • Consider small meals/frequent snacks incorporating nutrient-dense healthy fats.
Summary

• HCT recipients have increased relative risk of chronic health problems after transplant compared to their siblings.

• Fatigue is multifactorial in nature and likely requires a multidisciplinary approach for treatment.

• Optimizing nutrition may attenuate the increased risk of chronic conditions in the post-transplant setting.

• COVID-19 pandemic creates new challenges but has provided opportunity to re-evaluate system processes and hopefully improve upon them.

• HCT recipients are resilient. They are survivors. Advocate.
Thank you!