Strive to Thrive! Understanding Your Health After a Transplant Using Your Own Cells (Autologous Transplant)

Celebrating a Second Chance at Life Survivorship Symposium

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Strive to Thrive!
Understanding Your Health after a Transplant Using Your Own Cells (Autologous Transplant)

Learning Objectives

- Review the late and long-term complications that may develop after an autologous hematopoietic cell transplant (ASCT)
- Discuss risk factors for developing each complication
- Outline strategies to identify and address symptoms that may be encountered after ASCT.

What is an Autologous Hematopoietic Stem Cell Transplant (ASCT)?

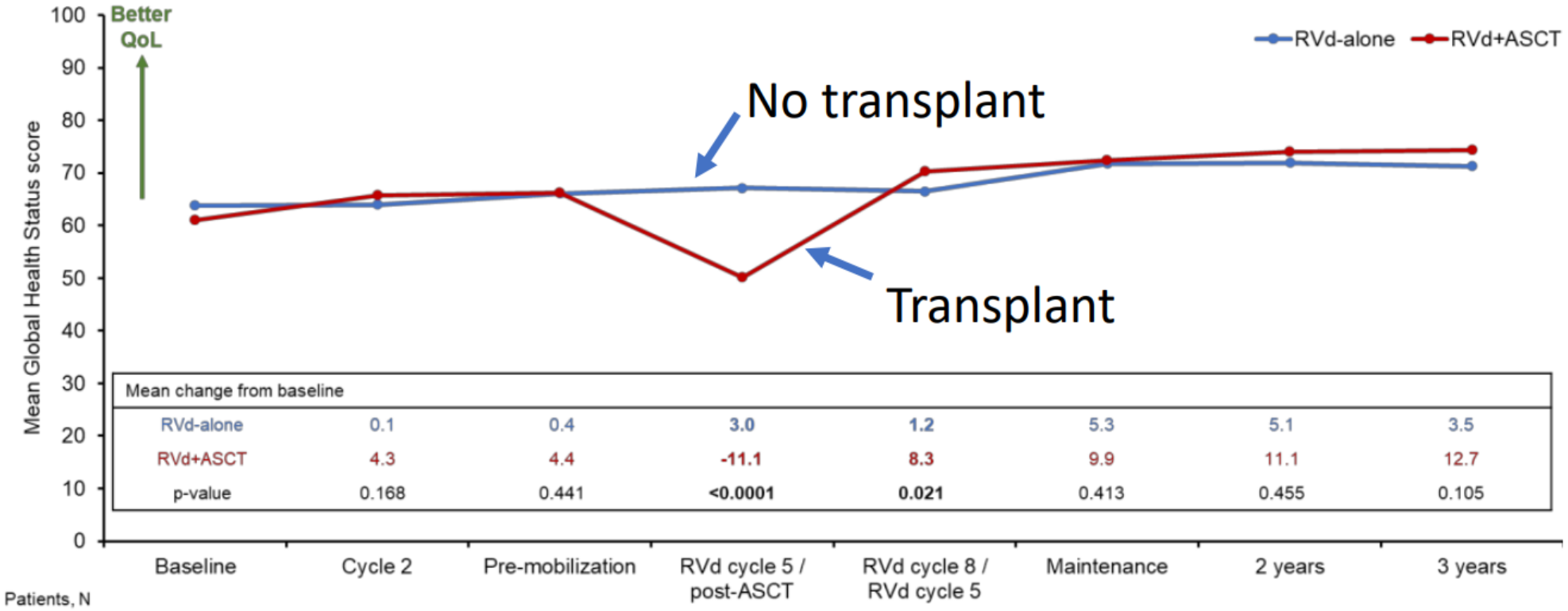
- High dose of chemotherapy that is toxic to the cancer but also toxic to blood-forming stem cells
- We ‘harvest’ and give back the patient’s own stem cells to overcome that form of toxicity
- Who usually gets an ASCT
  - Lymphoma
  - Multiple Myeloma
  - Germ Cell Tumor

Differences Between Autologous HCT, Allogeneic HCT, and CAR T-cell Therapy

	HSCT	ASCT	CAR-T
Donor Source	Non-Self	Self	Self
Chemotherapy Intensity	Very Intensive	Very Intensive	Less intensive
Source of Benefit	Infused Cells	Chemotherapy only	Infused Cells
Late Effects	Very many related to chemotherapy and immune effects	Many related to chemotherapy	Fewer, still new therapy with limited long term follow up

Multiple Myeloma: Early Recovery after ASCT

Patient-reported quality of life (myeloma)



Early Side Effects after ASCT

- Low blood counts
- Risk for infections
- Fatigue
- Reduced strength
- Altered taste
- Reduced quality of life

Disease Monitoring after ASCT

- Maintenance Therapy
  - Multiple Myeloma
    - Revlimid or other drugs
  - Lymphoma
    - In certain circumstances, Rituximab or Brentuximab
    - Often, no maintenance therapy is given
- Disease monitoring
  - Combination of labs, scans, and possibly bone marrow biopsies
  - Specific testing is individualized to the patient and type of cancer

Late Recovery and Potential Side Effects

Six months after ASCT

- Physical Recovery
  - Return to work and previous activities
  - Re-engage in physical activity
- Mental Recovery
  - Support groups
  - Brain Fog
- Social Recovery
  - Re-engage in social activities

Immune System Recovery

- The different components of the immune system recover at different rates
- Revaccination usually begins 3-6 months after ASCT
- Schedule of administration varies by transplant center

Recommended Post-Transplant Vaccines

- Influenza
- COVID
- Pneumococcus
- Meningococcal
- HPV- up to age 45
- Recombinant (not live) Zoster- Shingrix
- RSV- for patients greater than 60
- Hepatitis B
- Hepatitis C
- Polio
- MMR
- Travel vaccines with ID assistance (Hep A, etc)

Secondary Cancer Risk

- Risk is difficult to measure but is likely higher in patients who have had an ASCT
- One study found that 6.7% of patients developed a new cancer within 15 years of ASCT[1]
- Types of Cancers
  - Blood cancers: AML/ALL/MDS
  - Solid tumors: lung, oral cavity, brain, thyroid, breast, melanoma, sarcoma

Secondary Cancer Risk

- Risk Factors:
  - Younger age at the time of ASCT
  - Smoking
  - Total amount of chemotherapy exposure
  - Radiation treatment

Monitoring for Secondary Cancers

- Routine Cancer screenings
    - Prostate cancer screening
    - Mammograms
    - Pap's Smear
    - Colonoscopy
    - Skin Exam with a dermatologist
    - Lung Cancer screening if indicated
    - Other testing based on personal and family history
- Frequency of testing is similar to general population
- Yearly Blood work with PCP to check for blood count abnormalities

Reduce Your Risk for Secondary Cancers

- Healthy Lifestyle
  - Healthy diet
  - Regular physical activity
  - Sunscreen use
- Smoking Cessation
- Routine health evaluations with health care provider

Heart Problems after ASCT

- Risk for heart problems increases 2-3x after ASCT
- Heart problems include high blood pressure, congestive heart failure, cardiovascular disease, arrythmias
- Factors that increase risk of heart problems
  - Certain chemotherapies such as anthracyclines
  - Radiation to chest
  - Smoking

Strategies to Maintain and Improve Heart Health

- Regular exercise
- Diets rich in whole grains
- Smoking Cessation
- Maintain healthy blood pressure
- Screening
  - Cholesterol check with primary care physician (PCP)
  - Monitor blood glucose for diabetes

Lung Problems after ASCT

- Types of lung toxicity
  - Radiation pneumonitis
  - Chemotherapy toxicity
  - Engraftment Syndrome
- Problems tend to occur early after ASCT or not at all

Lung Problems after ASCT

- Risk Factors
  - Chest radiation
  - Bleomycin exposure
  - Carmustine exposure
  - Smoking

Lung Health: Monitoring and Treatment

- Monitoring Strategies (when indicated)
  - Lung Function Studies – Pulmonary Functions Tests (PFTs)
  - Chest CTs
  - Follow up with lung specialist (Pulmonologist)
- Treatment Strategies
  - Steroids
  - Inhaled medicines
  - Avoidance of chemotherapy toxic to lungs in the future

Risk Factors for Nerve Damage after Autologous HCT

- Chemotherapy before ASCT
- Chemotherapy drugs used during ASCT
- Diabetes
- Spinal Arthritis

Nerve Health Issues

- Certain types of chemotherapy used before, during, or after ASCT can cause neuropathy
  - Sometimes neuropathy is permanent
- Contributing Risk Factors
  - Diabetes
  - Spinal Arthritis
  - Nerve damage from myeloma

Nerve Health Issues

- Symptoms
  - Most often, numbness
  - Less often, pain or cold intolerance

Promoting Nerve Health

- Thoughtful choice of future chemotherapy, if needed
- Gabapentin or Pregabalin
- Duloxetine
- Physical therapy
- Avoiding cold exposure
- Warm foot baths
- Compression stocks
- Acupuncture

Sexual Health Issues after ASCT

- Low Testosterone or Estrogen
  - Chemotherapy
  - Radiation
- Alternative causes of sexual dysfunction
  - Anxiety/depression
  - Poorly controlled diabetes
- Treatment
  - Hormone level monitoring and replacement
  - Management of contributing diagnosis
  - Sex Therapist or Couples Counselor

Fertility after ASCT

- Many females are menopausal after ASCT However, some women remain fertile
- Absence of menses does not necessarily mean infertility
- There does not appear to be a risk if pregnancy after completion of autologous HCT
- Engage experienced OB/GYN early if desire for pregnancy
- Male infertility is variable

Fertility Preservation

- Women
  - Eggs can be harvested and stored by fertility specialists before exposure to high doses of chemotherapy
  - Options after transplant require fertility specialist input
- Men
  - Sperm banking is feasible before high doses of chemotherapy

Mental Health Challenges after Autologous HCT

- Symptoms
  - Loss of interest in old hobbies or activities
  - Impaired sleep
  - Feelings of guilt
- These symptoms are common after high-intensity cancer treatment

Strategies to Improve Mental Health

- Engage in family and community activities
- Spiritual Support
- Cancer survivor support groups
- Get exercise
- Practice mindfulness or journalling
- Counseling
- Medications

Cognitive Health after ASCT

- Symptoms
  - Brain fog
  - Difficulty remembering things or completing tasks
- Risk Factors
  - Age
  - Medication side effects
  - Dietary deficiencies
  - Depression or anxiety
  - Impaired sleep

Cognitive Health

- Strategies for improvement
- Some symptoms may improve with time off chemotherapy
- Formal testing for reversible causes
  - Vitamin levels
  - Thyroid function
  - Sleep apnea testing
  - Formal cognitive testing
- Asking for help

Summary

- Most patients return to previous level of activity after autologous HCT
- The best health action is to maintain regular contact with your primary care provider and treating hematologist or oncologist
- Certain health issues are more common after ASCT including heart and bone issues or new cancers
- Engaging in healthy behaviors such as regular exercise and smoking cessation can have a tremendous impact on your health and well-being after ASCT

Other Resources

- BMTinfonet.org
- theMMRF.org (Multiple Myeloma Research Foundation)
- LLS.org (Leukemia & Lymphoma Society)

Upcoming BMT INFONET Talks

- Saturday, May 3
  - 2:30- After Transplant: Finding Qualified Health Care Providers
  - 3:45- How to navigate the challenges of caregiving
- Sunday, May 4
  - 12:00- Multiple Myeloma: Maintenance Therapy to Prolong Survival and Improve Life after Transplant
- Monday, May 5
  - 12:00- The impact of gut microbiome on transplant or CAR-T cell Therapy
  - 2:30- New Cancers after Transplant or CAR-T cell Therapy: Who is at risk?
  - 3:45- Protecting your skin after transplant

Upcoming BMT INFONET Talks

- Tuesday, May 6
  - 1:15- enhancing intimacy and sexual well-being for couples after transplant and CAR-T cell Therapy
  - 3:45- Sleep: Why we need it, how to get it
- Wednesday, May 7
  - 12:00- Enhancing survivorship with Exercise OR What is neuropathy? How Can it be Managed
  - 2:30- Eating well after transplant and CAR-T cell therapy: why it matters
- Thursday, May 8
  - 12:00- From worn out to energized: Tackling Fatigue after transplant or CAR-T cell Therapy
- Friday
  - Cognitive Challenges after Transplant and CAR-T cell Therapy and Treatment Options

Citations

1. Curtis, R. E. M. A., et al. (1997). "Solid cancers after bone marrow transplantation." The New England Journal of Medicine **336(13): 897-904.**

Questions?

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Let Us Know How We Can Help You

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