The Blood Cancer Twice As Likely To Affect African Americans: Multiple Myeloma
OBJECTIVES/ OVERVIEW

• Definitions: “What is a cancer of the blood?”
• Anatomy and Biology of the Bone Marrow
• Common Cancers of the Blood and Bone Marrow
• Myeloma
  • What is Multiple Myeloma?
  • Incidence in African Americans
  • Treatment and Improved Survival
  • Ethnic Disparities in Myeloma Treatments
  • Testing for Multiple Myeloma
  • Community Education of Myeloma
• Conclusions

Disclosures: Craig Cole, MD is a consultant for Onyx Pharmaceuticals government affairs office and has no relevant financial interests to disclose
Definitions: what is a hematologic (Blood) cancer?

• Is it “bone cancer”?
  – NO
  – Bone cancer is a very rare cancer of the bone called **Sarcoma**.

• Is it “cancer that has gone to the bones?”
  • NO
  • Other cancers that have gone to the bone are called “**Metastatic cancer to the bone**”.

• Is it “cancer of the blood cells produced by the marrow inside the bone”?
  • YES
Red Blood Cells
White Blood Cells
Platelet Cells
Lymph Cells
Antibody Proteins
Plasma Cells
Bone Marrow
Blood Factory
Marrow

Anatomy and Biology

Bone Marrow
Blood Factory

Marrow
What is Multiple Myeloma?

- Multiple myeloma is a cancer of the plasma cell.
  - When plasma cells become cancer they make excessive amounts of antibody (M) protein.

- Manifestations
  - 90% of people with myeloma have multiple sites of disease involved at the time of diagnosis.
  - Low blood counts – fatigue.
  - Kidney damage from M proteins which are toxic to the kidneys
  - Bone tumors and fractures - pain

- Diagnosis
  - Blood tests, urine tests, X-rays, and bone marrow biopsy.
African Americans have the highest risk of myeloma of any race/ethnic group in the world.

Incidence in older black males and females was 126% greater than the incidence in similar age white males and females in 2010.

22,350 new cases of multiple myeloma were diagnosed in 2013.

African Americans have more than twice the myeloma incidence rate of whites.

- 12 vs. 5 per 100,000 population.

African Americans have the highest risk of myeloma of any race/ethnic group in the world.

All races: 5.8/100,000

All Black: 11.6/100,000

All Hispanic: 5.29/100,000

All White: 5.26/100,000

Am Indian: 4.59/100,000

All Asian: 3.2/100,000
Incidence of myeloma increased with age. 
- Median age at diagnosis for AA is 66 years.
- The highest incidence rates are found in African American males older than 85 years of age.


Race and Incidence of Multiple Myeloma

- From 2006 to 2010, myeloma was the 8th most common cancer among African Americans males.
- 7th most common cancer among African Americans females.
- Incidence of myeloma increased with age.
  - Median age at diagnosis for AA is 66 years.
- The highest incidence rates are found in African American males older than 85 years of age.
Why do African-Americans have a High Risk for Myeloma?

- No conclusive evidence for multiple myeloma being hereditary.
- Exposure to ionizing radiation and several manufacturing occupations and industries are associated with myeloma.
- The racial difference in incidence cannot be explained by:
  - Obesity
  - Tobacco or Alcohol use
  - Dietary preferences
  - Vitamin intake
  - Family history of myeloma
  - Socioeconomic Status

**Advancements in Multiple Myeloma Biology**

- Until 1997, therapy for multiple myeloma was limited to chemotherapy.
  - Only 30% of people responded.
  - Average survival was 2 years.

- Research into the **science** of how multiple myeloma grows has resulted in **targeted** treatments which selectively destroy the cancer cells.
  - Immunomodulatory therapy
    - Thalidomide, Lenalidomide, Pomalidomide
  - Proteasome inhibitors
    - Bortezomib, Carfilzomib

Advancements in Survival from Multiple Myeloma

- With new biology based medications response rates are now 91 to 98%.
- Survival has more than doubled in myeloma patients to over 6.1 years!
- When novel therapies are used at diagnosis, survival is improved dramatically.
  - From 3.8 years to 7.3 years!

Myeloma is not curable. But is survivable!

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Ethnic Disparities in Myeloma treatment

Clinical trials = New treatments

New treatments = Better survival

Who is receiving

Clinical Trials?

Better Survival?
Ethnic Disparities in Myeloma Treatment; Impact of Novel Therapies

- New therapies and clinical trials have improved the survival for Caucasians with myeloma from 1993–97 to 2003–07.
- Smaller improvements have occurred for other racial/ethnic groups.
- The mortality rate for myeloma from 2006 to 2010 for black males was nearly double the rate for white males.

Years of life gained with new therapies for multiple myeloma

<table>
<thead>
<tr>
<th>Race</th>
<th>Years of Life Gained</th>
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<tr>
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<td>Asian</td>
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Ethnic Disparities in Myeloma Treatment; Impact of Novel Therapies

Multiple Myeloma Five-year relative survival by race for all age groups

- 1998-2001: 34.2%
- 2002-2005: 39.5%
- 2006-2009: 44.9%

% Difference in survival from 1998 to 2009:
- Non-White: +10.7%
- White: +8.1%

All values p<0.0001

Pulte D, et al. Leukemia & Lymphoma, 2013; Early Online: 1–7
Do Myeloma Patients of Ethnicity Receive the Novel Therapies?

- Patients with newly diagnosed myeloma in 1999, 2003, and 2007 were examined by using the National Cancer Institute's Patterns of Care Studies.
  - From 1999 to 2007, use of chemotherapy for the initial treatment of myeloma dropped.
    - From 32.0% to 4.1% for Melphalan
    - From 18.2% to 0.4% for other chemotherapies
- The percentage of patients receiving any novel agent rose from 3.9% in 1999 to 75.5% in 2007.

Myeloma patients of ethnicity were less likely to receive novel therapies.
Ethnic Disparities in Myeloma Treatment; Clinical Trials

**Lenalidomide, bortezomib, and dexamethasone combination therapy in patients with newly diagnosed multiple myeloma**

*Blood* 2010 Aug. Vol 166 (5)

**Bortezomib, melphalan, and prednisone versus bortezomib, thalidomide, and prednisone as induction therapy followed by maintenance treatment**

*Lancet Oncol.* 2010 Oct;11(10):934-41

Ethnic Disparities in Myeloma Treatment; Barriers

Strategies for the prevention or screening multiple myeloma:

What are the barriers to more timely diagnosis, treatment, and survival with the new medications for multiple myeloma?

- Lack of awareness about research
- Lack of access to clinical trials
- Fear
- Distrust
- Cultural beliefs
- Lack of access to facilities that are performing research

Education and Awareness of Multiple Myeloma

Cancer 2008 112(3):447–454
Community Education of Multiple Myeloma; Jacksonville, FL

• In 2010 Mayo Clinic-Jacksonville partnered with African American churches to provide educational programs focused on myeloma awareness, cancer research and healthy behaviors.

• Despite 88% having a primary care provider…
  – 67% of participants had never received information on multiple myeloma.
  – 57% never received clinical research study information.
  – Most participants would enroll in clinical trials if asked.

• At the 2013 African American Sankofa Health and Wellness Forum in Milwaukee, WI 88% of participants were unaware of multiple myeloma.
Community Education of Multiple Myeloma; Southeastern Wisconsin

• The Jane Cremer Foundation is a not-for-profit in Southeastern Wisconsin with its mission to...

• **Educate and Empower** women to be proactive in the prevention, diagnosis and treatment of cancer.

• With two African American church based educational events, nearly 400 people were informed of:
  – Increased incidence of multiple myeloma in their community.
  – How to empower themselves to seek out the newest treatments and clinical trials.
  – Healthy life style activities.
Could I have Myeloma?
Think B.A.C.K

B - Bone pain from the effects of myeloma cells on the marrow.

A - Anemia (low red blood)

C - High blood calcium or confusion

K - Kidney function is poor

Ask for the Myeloma Blood and Urine testing
The Keys to Myeloma Education and Empowerment in the Ethnic Community

Breakdown the Barriers

• Bring the education to the community.
• Begin with the basics.
  • Do not use terms to challenge anyone’s Health Care Literacy.
• Stress purpose of any myeloma education in the community is not “medical” or “scientific” but is “educational”.

The Keys to Myeloma Education and Empowerment in the Ethnic Community

Empower Your Audience!

• **Educate patient empowerment.**
  – To teach about multiple myeloma is **not** enough.
  – People need to be given “permission” to…
    • Ask their doctor questions.
    • To question their doctor.
  – Educating communities on the importance of cancer research as an **empowerment tool**.
  – Deliver information necessary for racial and ethnic groups to “break-through” the social/economic barriers.
    • Resources in the community.
    • Overcome “health care illiteracy”.

• **Educate the community providers (RNs, MDs, PAs, etc…)**

Conclusion

• The multiple myeloma is common hematologic (blood) cancer of the plasma cell in the bone marrow.
• It is twice as common in African Americans that all other racial and ethnic groups.

• The best method of detection is KNOWLEDGE of multiple myeloma.
  • Awareness of the signs and symptoms.
  • With any suspicion, see your primary care doctor for evaluation!

• Advances in science through clinical trials have improved the detection, diagnosis, and treatment of multiple myeloma.
  • Resulting in longer and better lives for all myeloma patients.
Learn More and Educate Others

– The Leukemia & Lymphoma Society: www.lls.org
– Multiple Myeloma Research Foundation: www.themmrhf.org
– International Myeloma Foundation: www.myeloma.org
– National Cancer Institute: www.cancer.gov

Thank You!
For Your Time and Attention
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