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Systematic Review: Diversity of Enrollment in Multiple Myeloma Drug Trials Among Different Ethnicities

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Systematic Literature Review: Diversity of Enrollment in Multiple Myeloma Drug Trials Among Different Ethnicities

Background & Significance

- **Multiple Myeloma** is a malignant disease characterized by the infiltration of bone marrow by cancerous plasma cells.
- Multiple myeloma affects Non Hispanic Blacks (NHB) 66% more often than Non Hispanic Whites (NHW).
- Average cost of these drug therapies range from $4,000-6000.

**The Purpose:**

- Compare the ethnic diversity in enrollment for different drugs used to treat multiple myeloma.

**Research Questions**

- What barriers are preventing NHB from participating in clinical trials?
- What can be done to help increase participation?

Methods

- 37 articles
- Gender (Male/Female)
- Ethnicity (African American, White, Asian, Hispanic)
- Drugs included: Thalidomide, Bortezomib, Carfilzomib, Ixazomib, Lenalidomide, Pomalidomide, Panobinostat, Elotuzumab, Daratumumab

**Clinical trials in phases 2 or 3**

- Excluded:
  - 20 sources missing African American participation data
  - 22 sources missing White participation data

- Included:
  - 15 viable data sources for NHB participation
  - 17 viable data sources for NHW participation

- In 2018, 30,770 new multiple myeloma cases were diagnosed and of these 6,190 were NHB.  20.11%

- One sample T-test used to compare the prevalence amongst the black population and the average enrollment of blacks in the 37 sources of data

Average number of patients enrolled per Clinical Trial

<table>
<thead>
<tr>
<th></th>
<th>Non Hispanic Blacks</th>
<th>Hispanic</th>
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<tbody>
<tr>
<td><strong>African American cases</strong></td>
<td>make up 20% of the new cases diagnosed in 2018.</td>
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<tr>
<td>Based on enrollment NHB are enrolled to the same degree as the NHW population</td>
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<tr>
<td>What is possibly keeping them from enrolling</td>
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<tr>
<td>25% of the population in poverty is made of African American.</td>
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<td>Cost of these drugs</td>
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<tr>
<td>Locations of where therapy is done (US/International)</td>
<td></td>
<td></td>
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<tr>
<td>Personal view point of patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmaceutical company reporting and research</td>
<td></td>
<td></td>
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<tr>
<td>Not required to report</td>
<td></td>
<td></td>
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<tr>
<td>Could be altering the collected data</td>
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<tr>
<td>Out of 37 sources of data only 4 were either not funded or did not state pharmaceutical funding for their research.</td>
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<tr>
<td>More research is needed to determine why the most affected population isn’t properly represented in drug clinical trials.</td>
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</table>

Kaitlin Adams & Laura Guerrieri  MENP
Research Advisor: Dr. Joseph Tariman

Results

- T-test is significant .000 < .05
  - One sample T-test value= 20.11
- Mean NHW enrollment- 346.9
- Mean NHB enrollment- 11.73
- Average % of NHW enrollment- 83%
- Average % of NHB enrollment- 5.3%
- Large amount of missing data from data sources-