Enrollment Disparities on the Basis of Age and Chronic Disease Burden in Cardiovascular Clinical Trials: Are Patients’ Decisions the Reason?

Aparna Parikh, Neil R. Poe, Joel B. Braunstein, Johns Hopkins Medical Institutions, Baltimore, MD

Background: Randomized controlled trials have been criticized for enrolling select groups of patients, while excluding those most representative of the population under study. In cardiovascular disease, this concern implies inadequate representation of patients who are older and have multiple comorbidities. We determined willingness to participate (WTP) in a cardiovascular clinical trial among a community-based sample of patients with these characteristics.

Methods: We approached 1440 randomly selected individuals from 13 Maryland-based outpatient cardiology and internal medicine clinics to complete a brief self-administered survey, which contained a 1-page description of an efficacy trial of a new drug for prevention of myocardial infarction. We measured WTP on a 5-point Likert response scale (+ response = Very likely likely). Patients provided demographic and socioeconomic information, along with a report of their comorbidity burden, measured by presence of conditions included in the Deyo-Charlson case-mix severity index.

Results: Of 1132 patients eligible, 789 (70%) patients responded. Patients were mean aged 54 ± 16 (range 18-89) years, 51% female, and 35% black, with a median of 2 comorbidities (range 0-11). Older-aged patients (>75 years)(n=79) were less WTP than younger patients (19% vs. 36%, p<0.01). Patients with more extensive comorbidity, however, were no less WTP than those with less extensive comorbidity (WTP = 29% if no comorbidity, 34% if 1 comorbidity, 35% if 2-4 comorbidities, 39% if > 5 comorbidities, p<0.43). In multivariable logistic regression, after adjusting for race, gender, income, and education, older age was associated with a 65% lower likelihood of WTP (OR, 95% CI = 0.35, 0.19-0.64; p<0.001), while each additional categorized comorbidity in increase was associated with a 19% higher likelihood of WTP (1.19, 1.00-1.42; p<0.05).

Conclusion: While older age is independently associated with lower WTP in cardiovascular clinical trials, more extensive comorbidity is not. These findings warrant consideration in the design of future trials, which seek to adequately enroll cardiac patients who are most representative of those encountered in routine clinical practice.

The Impact of Prior Myocardial Infarction, Metabolic Syndrome, and High White Blood Cell Count on Coronary Heart Disease Mortality: The Multiple Risk Factor Intervention Trial (MRFIT) 18-Year Follow-Up Experience

Jerome D. Cohen, Ronald J. Prineas, Xin Zhi, Lynn E. Eberly, Lewis H. Kuller, James D. Neaton, The MRFIT Research Group, University of Minnesota, Minneapolis, MN, St. Louis University, St. Louis, MO

Background: Predictors of coronary heart disease (CHD) mortality include history of myocardial infarction (MI), metabolic syndrome (MS) and inflammatory markers. MRFIT data are used to examine their impact on CHD mortality over 18 years.

Methods: At the end of 6 years follow-up there were a total of 11,357 men with measures of MS, MI and inflammatory markers. MI during the study (n=208) was documented by records and/or ECG. Metabolic syndrome (n=4,761) was defined by ATP III guidelines with at least 3 of the following present: obesity (BMI≥30 kg/m2 as a surrogate for waist circumference), hypertension (blood pressure ≥130/85 mm Hg or on drugs), low HDL cholesterol (<40 mg/dl), high fasting triglycerides (>150 mg/dl) and high fasting glucose (≥110 mg/dl). WBC above the median (6,900/µL) was used as a marker for inflammation (n=5,678). Post-trial mortality was ascertained using the National Death Index.

Results: There were 1,257 CHD deaths after 18 years. The table shows the hazard ratios for CHD mortality after adjustment for age, race, treatment group, smoking status at entry and year 6 and average LDL cholesterol during follow-up. Similar results were seen with total and CVD mortality.

Conclusions: The impact of each of these risk factors on CHD mortality is highly significant and additive. These simple assessments can identify high risk patients who can be targeted for appropriate medical management.

Hazard Ratios (HR) for CHD Mortality by Presence/Absence of MS, WBC >6,900/µL and/or Prior MI

<table>
<thead>
<tr>
<th>MS</th>
<th>WBC &gt; 6,900/µL</th>
<th>MI</th>
<th>No.</th>
<th>% Total</th>
<th>No.CHD Deaths</th>
<th>HR CHD Death</th>
<th>95% CI</th>
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</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3,395</td>
<td>(29.9)</td>
<td>265</td>
<td>1.0</td>
<td>(reference)</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>+</td>
<td>47</td>
<td>(0.4)</td>
<td>13</td>
<td>3.7</td>
<td>(2.1-6.5)</td>
</tr>
<tr>
<td>+</td>
<td>-</td>
<td>+</td>
<td>3,084</td>
<td>(27.2)</td>
<td>302</td>
<td>1.2</td>
<td>(1.0-1.5)</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>2,182</td>
<td>(19.2)</td>
<td>220</td>
<td>1.4</td>
<td>(1.2-1.7)</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>-</td>
<td>70</td>
<td>(0.6)</td>
<td>19</td>
<td>3.9</td>
<td>(2.4-6.4)</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>32</td>
<td>(0.3)</td>
<td>12</td>
<td>5.6</td>
<td>(3.0-10.2)</td>
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<td>+</td>
<td>+</td>
<td>2,488</td>
<td>(21.9)</td>
<td>393</td>
<td>2.2</td>
<td>(1.9-2.6)</td>
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<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>59</td>
<td>(0.5)</td>
<td>33</td>
<td>10.7</td>
<td>(7.4-15.6)</td>
</tr>
</tbody>
</table>

Poster Session

1153 Patient and Physician Factors Important to Successful Care

Tuesday, March 09, 2004, Noon-2:00 p.m.
Morial Convention Center, Hall G
Presentation Hour: 1:00 p.m.-2:00 p.m.

1153-57 Patient Attitudes in Cardiovascular Trials: The PACT Survey

Mien Gupta, Blanche Aaron, Janice Burtcher, Nicolle Bonafede, David Borts, Brampton Research Associates, Brampton, ON, Canada, William Osler Health Centre, Brampton, ON, Canada

Background: Little is known about patient attitudes towards informed consent and participation in cardiovascular clinical trials (CT). We surveyed 430 consecutive participants in 8 large in-patient (IP) and out-patient (OP) trials between 1998-2002 through a mailed survey to over 3 months.

Results: Of 430 participants, 37 (8.6%) died prior to study completion, and 242 (61.6%) responded to the survey (69% male). Similar proportions had participated in IP and OP CT (46.7% vs. 53.3%). The majority were 50-69 years old (59.8%), with 35.7% ≥age 69, with no difference in age distribution between genders. The majority had a high school (38.7%) or university degree (28.5%) and were unemployed or retired (66.9%). Most patients had read the study consent form (87.6%), and 3.5% found the consent form too difficult to understand. Women were more likely to feel pressured to join their CT than men (16.2% vs. 5.5%, p=0.024). Side effects attributed to study drug were common among women (27.5% vs. 11.9%, p=0.005), but early drug termination was similar between genders (7.3% vs. 6.6%). The majority (74.4%) were willing to participate in future CT. Other differences noted:

- % IP Participants: 68.0
- % OP Participants: 89.0
- Received copy of consent: 49.1
- Felt pressure to join study: 15.4
- GP aware of participation: 47.6
- Would participate again: 65.5

Conclusions: CT participants are satisfied with informed consent and are willing to participate in future trials. Women are more likely to feel pressured into joining, and to experience study-related side effects. The consent process is sub-optimal for participants of in-patient clinical trials, and warrants further investigation.

1153-68 Do Patients With Heart Failure Have a Medically Accurate Mental Image of Their Illness (also known as Illness Representation)?

Nancy M. Albert, The Cleveland Clinic Foundation, Cleveland, OH

Background: HF self-care behaviors modulate symptoms, morbidity and prognosis but adherence is inconsistent. Mental image of an illness or illness representation (REP) influences coping and behavior. Attributes of REP that influence behavior in other chronic conditions are identity (label, silent processes, symptoms), time-line (duration), consequences (prognosis) and control (self-care actions). Medically inaccurate HF-REP may negatively impact self-care adherence. There are no published reports of the medical accuracy of patient-HF-REP. Methods: 154 chronic systolic HF patients completed a 33-item Likert scale of HF-REP statements. Patient sum score (range 33-132) determined the level of HF-REP medical accuracy and item mean score (range 1-4) specified items of low and high medical accuracy. Demographic and medical history data were used to determine predictors of medically accurate HF-REP. Instrument Cronbach’s alpha was .8535; validity testing completed. Results: Mean age was 61.8 ± 13.13; 66% of patients had HF > for 2 years. Mean sum score was 98.8, reflecting medically accurate HF-REP. Thirty patients (28%) scored in the mixed medically inaccurate-inaccurate range (72-93)