SECULAR INCREASES IN SPONTANEOUS SUBARACHNOID HEMORRHAGE DURING PREGNANCY

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Disclosures:

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Background:

- Limited data on epidemiology, management and outcomes of sSAH in pregnancy and puerperium

- Small, single center studies

- Higher morbidity and mortality in pregnant cohort
Methods:

• A retrospective analysis of Nationwide Inpatient Sample (NIS) and Healthcare Cost and Utilization Project (HCUP) for the years 2002–2014 was performed

• NIS is one of the largest administrative database
• Designed to produce nationally weighted estimates
• Hospital admissions and discharge data
Methods:

• Women patients within age group 15-49 with sSAH were identified with International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) code 430

• Pregnancy and maternal diagnosis were identified using pregnancy related ICD codes validated by previous studies.

• Cochran-Armitage trend test and parametric tests were utilized to analyze temporal trends and group comparisons.
Results:

• There were 73,692 admissions for sSAH occurred in women age group of 15-49 years from 2002 to 2014

• 3,978 (5.4%) were in pregnant women

• Over the 12 years of study period, the proportion of sSAH during the pregnancy increased from 4.16 % (in 2002) to 6.33% (in 2014) {p-trend <0.001}

• During the same period there was a reduction in sSAH in non-pregnant women
National Trend of sSAH proportion in pregnant women from 2002-2014
Ethnicity and sSAH in pregnancy

• African American – 8.19
• Hispanic – 7.11
• Caucasian women – 3.83

• % Proportion of sSAH in pregnancy as compared to non pregnant cohort with sSAH
Age and sSAH in pregnancy

- Age 15-19: 11.3
- Age 20-29: 20.0
- Age 30-39: 10.0
- Age 40-49: 0.6

- % higher chances of having sSAH in pregnancy as compared to non pregnant cohort
Age based presentation of sSAH in pregnant and non-pregnant women

- sSAH in pregnant women
  - 15-19: [data point]
  - 20-29: [data point]
  - 30-39: [data point]
  - 40-49: [data point]

- sSAH in non-pregnant women
  - 15-19: [data point]
  - 20-29: [data point]
  - 30-39: [data point]
  - 40-49: [data point]
Medical co-morbidities in pregnant vs non-pregnant women with sSAH (%)

- CVST
- Smoking
- Sickle cell disease
- AKI
- CKD
- HTN
- Diabetes
- Septicemia
- Heart Failure
- Cardiac procedure
- Liver disease
- PRES

Pregnant women with sSAH
Non pregnant sSAH women
Outcomes for sSAH based on pregnancy and hospital type

<table>
<thead>
<tr>
<th></th>
<th>Routine (Home)</th>
<th>Transfer to SNF/ICF/STH/HHC</th>
<th>Died in hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant Non teaching</td>
<td>53.51</td>
<td>39.36</td>
<td>7.12</td>
</tr>
<tr>
<td>Pregnant Urban teaching</td>
<td>65.95</td>
<td>26</td>
<td>8.05</td>
</tr>
<tr>
<td>Non pregnant Non teaching</td>
<td>37.78</td>
<td>40.74</td>
<td>21.48</td>
</tr>
<tr>
<td>Non pregnant Urban teaching</td>
<td>50.37</td>
<td>33.21</td>
<td>16.42</td>
</tr>
</tbody>
</table>
sSAH national treatment insights: pregnant vs non pregnant women

<table>
<thead>
<tr>
<th></th>
<th>Pregnant</th>
<th>Non-pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clipping</td>
<td>2.33</td>
<td>4.68</td>
</tr>
<tr>
<td>Coiling</td>
<td>5.28</td>
<td>18.2</td>
</tr>
</tbody>
</table>
National treatment insights: Clipping vs coiling ratio in pregnant vs non-pregnant women

**sSAH in pregnancy**
- Clipping: 31%
- Coiling: 69%

**sSAH in non-pregnant women**
- Clipping: 20%
- Coiling: 80%
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  • Edgar Samaniego, MD, MS
  • Santiago Ortega, MD, MS
  • David Hasan, MD (Neurosurgery)
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Thanks!

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