Morphological differences in aortic anatomy in Latin American countries

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Disclosure

Speaker name:

Alejandro Fabiani

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

I do not have any potential conflict of interest
1st Observation

Proximal aortic neck is smaller in México
Ao. Suprarrenal

Length: 2.918 cm (34.113 pix)
2nd Observation

EVAR is less frequent in Mexico than in other Latin American Countries
EVAR 2012

Endoprotesis aorticas (EPA) vendidas en 2012
EPA en relación a número de habitantes

Datos proporcionados por la industria
ADVISE Registry

Aortic Diameter Variation In Sex and Geography

The aim of this registry is to measure normal aortic diameter and compare results obtained in different countries.
Material & Method

Prospective measurement of aortic diameter @ 5 different levels
ADVISE Registry

Aortic Diameter Variation in Sex and Age Phenotype

Date

Country/Region/Clinic

Country of Patient Residence

Family Origin (you can choose more than one)
- European
- North American
- Latin-American

Aortic Measurement

Weight (kg)

Aortic Diameter at Celiac trunk (in mm)

Aortic Diameter at Superior Mesenteric artery (in mm)

Aortic Diameter at Right Renal artery (in mm)

Aortic Diameter at Inferior Mesenteric artery (in mm)

Aortic Diameter at Bilateral (in mm)

Diameter of proximal Right Iliac artery (in mm)

Diameter of proximal Left Iliac artery (in mm)

Observations and Comments

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<table>
<thead>
<tr>
<th>Treatment</th>
<th>Date</th>
<th>Clinical Form</th>
<th>Date of patient</th>
<th>Identification of the patient</th>
<th>Age</th>
<th>Gender</th>
<th>Way and reason for emergency intervention</th>
<th>Anterior Diameter of the Aorta in mm</th>
<th>Anterior Diameter of the Aorta in cm</th>
<th>Anterior Diameter of the Aorta in m</th>
<th>Anterior Diameter of the Intestinal Aorta in cm</th>
<th>Anterior Diameter of the Intestinal Aorta in mm</th>
<th>Anterior Diameter of the Intestinal Aorta in m</th>
<th>Number of previous heart attacks</th>
<th>Diameter of the aorta in cm</th>
<th>Fibroid bodies in mm</th>
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<tbody>
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Colaboradores

Miguel Carrillo, México
Claudio Schonholtz, USA
Carlos Vaquero, España
Luis Morelli, Costa Rica
Diego Herrera Vegas, Argentina
Miguel Montero, USA

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Calculated n=160 cases

Exclusion Criteria
Age < 20 years
Any aortic or arterial disease

Cases included
166 pacientes (77 hombres)
  Mexico 106
  Other 4 countries 60
Results

<table>
<thead>
<tr>
<th></th>
<th>Mexico 106</th>
<th>Non-Mexico 60</th>
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<tbody>
<tr>
<td>Male</td>
<td>51</td>
<td>26</td>
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<tr>
<td>Female</td>
<td>55</td>
<td>34</td>
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<tr>
<td>Age</td>
<td>60</td>
<td>61</td>
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<tr>
<td>BMI</td>
<td>26</td>
<td>25</td>
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</table>
**Celiac Axis**

<table>
<thead>
<tr>
<th>Grupo</th>
<th>Media</th>
<th>Desv est</th>
<th>IC 95%</th>
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</thead>
<tbody>
<tr>
<td>MX</td>
<td>21,38</td>
<td>3,562</td>
<td>20,698 – 22,07</td>
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<tr>
<td>Non</td>
<td>21,59</td>
<td>4,0</td>
<td>20,56 – 22,626</td>
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</table>

**Mann-Whitney Rank Sum Test**

P = 0.342
<table>
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<th>Grupo</th>
<th>Media</th>
<th>Desv est</th>
<th>IC 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX</td>
<td>19.61</td>
<td>3.015</td>
<td>19,031 – 20,193</td>
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<tr>
<td>Non</td>
<td>20.63</td>
<td>4.097</td>
<td>19,579 – 21,695</td>
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<tr>
<td>MX</td>
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</table>

Mann-Whitney Rank Sum Test

P = 0.052
## Right renal

<table>
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<th>Media</th>
<th>Desv est</th>
<th>IC 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX</td>
<td>17,30</td>
<td>3,052</td>
<td>16,717 – 17,893</td>
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<tr>
<td>Non</td>
<td>19,95</td>
<td>4,286</td>
<td>18,851 – 21,065</td>
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<tr>
<td>MX</td>
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**Mann-Whitney Rank Sum Test**

P < 0,001

La diferencia es estadísticamente significativa α = 0,05
### Inf Mesent

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<tr>
<td>MX</td>
<td>15,86</td>
<td>2,287</td>
<td>15,422 – 16,304</td>
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<td>Non</td>
<td>18,21</td>
<td>4,99</td>
<td>16,93 – 19,508</td>
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</tbody>
</table>

**Mann-Whitney Rank Sum Test**

\[ P = 0,006 \]

La diferencia es estadísticamente significativa \( \alpha = 0,05 \)
### Bifurcation

<table>
<thead>
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<th>Grupo</th>
<th>Media</th>
<th>Desv est</th>
<th>IC 95%</th>
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<tbody>
<tr>
<td>MX</td>
<td>15,36</td>
<td>2,147</td>
<td>14,949 – 15,775</td>
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<td>Non-MX</td>
<td>17,61</td>
<td>4,596</td>
<td>16,414 – 18,81</td>
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</tbody>
</table>

**Mann-Whitney Rank Sum Test**

\[ P = 0,004 \]

La diferencia es estadísticamente significativa \( \alpha = 0,05 \)

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**Conclusion**
Aortic diameter measured on CT Scan in normal aorta from renal arteries to distal is smaller in México than in other compared countries.
We need to add more patients from different countries to have a better representative population.

If such differences persist:

could we question the universal definition of aortic aneurysm?

could we question the universal indication for treat aneurysm greater than of 55 mm in diameter?