Supplemental Calcium and Vitamin D on Long-Term Mortality in Aortic Stenosis

Kassis et al., Oral Calcium and Mortality in Aortic Stenosis

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**Supplemental Material**

Supplemental Table 1. Univariate and multivariable longitudinal mixed effects logistic regression model to predict progression of mild-moderate to severe aortic valve stenosis, according to type of supplementation.

Supplemental Figure 1. Impact of calcium and vitamin D supplementation on all-cause mortality stratified by aortic valve replacement.

Supplemental Figure 2. Impact of calcium and vitamin D supplementation on cardiovascular mortality stratified by aortic valve replacement.

Supplemental Figure 3. Impact of calcium and vitamin D supplementation on survival, stratified into A) males, and B) females.

Supplemental Figure 4. Progression of aortic stenosis, as measured by A) aortic valve area, B) mean aortic valve gradient, and C) peak aortic valve gradient, in patients who did or did not undergo aortic valve replacement.
Supplemental Table 1. Univariate and multivariable longitudinal mixed effects logistic regression model to predict progression of mild-moderate to severe aortic valve stenosis, according to type of supplementation.

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted*</th>
<th>Multivariable-adjusted model</th>
<th>P-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazards ratio (95% CI)†</td>
<td>P-value</td>
<td>Hazards ratio (95% CI)</td>
<td>P-value</td>
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<tr>
<td><strong>Overall population</strong></td>
<td></td>
<td></td>
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<tr>
<td>Vitamin D only</td>
<td>1.68 (0.97, 2.80)</td>
<td>0.052</td>
<td>1.20 (0.73, 1.88)</td>
<td>0.51</td>
</tr>
<tr>
<td>Calcium +/- vitamin D</td>
<td>1.50 (0.99, 2.37)</td>
<td>0.053</td>
<td>1.19 (0.75, 1.89)</td>
<td>0.44</td>
</tr>
<tr>
<td><strong>Underwent AVR</strong></td>
<td></td>
<td></td>
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<tr>
<td>Vitamin D only</td>
<td>1.05 (0.45, 1.97)</td>
<td>0.89</td>
<td></td>
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<tr>
<td>Calcium +/- vitamin D</td>
<td>0.72 (0.39, 1.35)</td>
<td>0.31</td>
<td></td>
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<tr>
<td><strong>Did not undergo AVR</strong></td>
<td></td>
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<tr>
<td>Vitamin D only</td>
<td>1.75 (0.80, 3.56)</td>
<td>0.122</td>
<td></td>
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<tr>
<td>Calcium +/- vitamin D</td>
<td>1.39 (0.86, 2.58)</td>
<td>0.157</td>
<td></td>
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</tr>
</tbody>
</table>

*Relative to the control group of no supplementation. Supplementation was defined as more than 12 months of intake after the baseline echocardiogram and with initiation at least 12 months prior to the last echocardiogram.

†Mixed effects logistic regression model, including an interaction term for effect of time.
Supplemental Figure 1. Impact of calcium and vitamin D supplementation on all-cause mortality stratified by aortic valve replacement.

In each graph, p-values are calculated using the log-rank test and labeled according to the comparison groups, with $p^1 = \text{calcium +/- vitamin D vs. no supplementation}$; $p^2 = \text{vitamin D only vs. no supplementation}$; $p^3 = \text{calcium +/- vitamin D vs. vitamin D only}$. 
Supplemental Figure 2. Impact of calcium and vitamin D supplementation on cardiovascular mortality stratified by aortic valve replacement.

In each graph, p-values are calculated using the log-rank test and labeled according to the comparison groups, with $p^1 =$ calcium +/- vitamin D vs. no supplementation; $p^2 =$ vitamin D only vs. no supplementation; $p^3 =$ calcium +/- vitamin D vs. vitamin D only.
Supplemental Figure 3. Impact of calcium and vitamin D supplementation on survival, stratified into A) males, and B) females.

In each graph, p-values are calculated using the log-rank test and labeled according to the comparison groups, with $p^1 =$ calcium +/- vitamin D vs. no supplementation; $p^2 =$ vitamin D only vs. no supplementation; $p^3 =$ calcium +/- vitamin D vs. vitamin D only.
Supplemental Figure 4. Progression of aortic stenosis, as measured by A) aortic valve area, B) mean aortic valve gradient, and C) peak aortic valve gradient, in patients who did or did not undergo aortic valve replacement.

A - Did Not Undergo AVR

B - Did Not Undergo AVR

C - Did Not Undergo AVR

A - Underwent AVR

B - Underwent AVR

C - Underwent AVR

p-value for trend < 0.001

p-value for trend < 0.001

p-value for trend < 0.001

No calcium or vitamin D

Calcium +/- vitamin D

Vitamin D Only