Major Bleeds on Warfarin More Likely as BMI Rises: Analysis

**Warfarin** competitively depleting functional vitamin K reserves and hence reduces synthesis of active clotting factors. Specially coagulation factors II, VII, IX, and X, as well as proteins C and S, which requires the presence of vitamin K.

**Warfarin** used for Prophylaxis and treatment of venous thrombosis, pulmonary embolism, and thromboembolic disorders; prevention and treatment of thromboembolic complications in patients with prosthetic heart valves or atrial fibrillation; reduction of the risk of death, recurrent MI, and thromboembolic events such as systemic embolization or stroke after MI; has also been used for the prevention of recurrent arterial ischemic stroke and TIAs. \[^1\]

On May 08, 2015 some analysis showed Major Bleeds on Warfarin More Likely as BMI Rises. SAN FRANCISCO, CA — in a small, 1-year study of patients receiving warfarin, obese patients had an 84% greater risk than nonobese patients of developing a major bleed that required hospitalization \[^2\].

This single-center, retrospective study showed that "there is a tendency for patients who are obese to bleed while on Coumadin, because they require a higher dose and a longer time to become therapeutic on that dose," the results suggest that body-mass index (BMI) may predict bleeding events in patients on warfarin.

Moreover, few studies have examined the relationship between **warfarin** and bleeding events in obese patients. Dr Adedotun A Ogunsua and his colleagues reviewed data from 863 patients on warfarin therapy who were seen in their medical center's anticoagulation clinic from March 2013 until April 2014. The patients had a mean age of 71 years, and 46.5% were female. About 60% of the patients were of normal weight (BMI 18.5–24.99; 21% of patients) or overweight (BMI 25–29.99; 38%). The rest were obese class I (BMI 30–34.99; 21%), obese class II (BMI 35–39.99; 9%) or obese class III (BMI >40; 11.3%). The patients were receiving warfarin for a variety of reasons: 18.3% had nonvalvular atrial fibrillation; 11.3% had a mechanical valve; 26.8% had DVT; and 14% had PE.

During the 1-year study, 71 patients (8.2%) had a bleeding event. Of these, 38 patients (4.4%) had major bleeds that required hospitalization: gastrointestinal bleeding from any source with or without a transfusion, and retroperitoneal or intracranial bleeding warranting discontinuation of warfarin treatment. The other 33 patients (3.8%) had a nonmajor bleed: epistaxis, hematuria, or vaginal and skin bleeds. Only the index bleeds were considered.

In univariate analysis, the risk for bleeding increased with increasing obesity categories.
<table>
<thead>
<tr>
<th>Obesity Class</th>
<th>BMI</th>
<th>HR (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>30–34.99</td>
<td>1.30 (0.75–2.5)</td>
<td>0.39</td>
</tr>
<tr>
<td>II</td>
<td>35–39.99</td>
<td>1.85 (0.7–4.6)</td>
<td>0.19</td>
</tr>
<tr>
<td>III</td>
<td>≥ 40</td>
<td>1.93 (0.9–4.2)</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Nonobese: BMI<30

After adjustment for multiple confounders—age>65 years, Hispanic ethnicity, sex, smoking, alcohol, congestive heart failure, dual antiplatelet therapy (aspirin and clopidogrel), and serum albumin—obesity (BMI >30) was associated with a significantly increased risk of a major bleed (HR 1.84, 95%CI, 1.33–2.55; \( P<0.001 \))

So when making a decision to put a patient on anticoagulation, we need to employ clinical decision-making tools to [weigh the risks and benefits].

References: