Incidence of Premature Discontinuation of Antiplatelet Therapy After Sirolimus-Eluting Stent Implantation

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Background Antiplatelet therapy in patients with sirolimus-eluting stents (SES) may be stopped because of bleeding or an invasive procedure.

Methods and Results In 254 patients with SES, the incidence of discontinuation of antiplatelet therapy and subsequent adverse cardiac events was evaluated. Follow-up was complete for 97.2% of the population and mean follow-up was 15.6±8.9 months. Discontinuation of antiplatelet therapy occurred for 46 patients (18.1%): 1 case of late stent thrombosis (2.2%) occurred 10 days after cessation of therapy because of pulmonary hemorrhage 7 months after SES deployment.

Conclusion Discontinuation of antiplatelet therapy in patients with SES is not infrequent. (Circ J 2008; 72: 340–341)

Key Words: Antiplatelet therapy; Drug-eluting stent; Late stent thrombosis

Long-term antiplatelet therapy after drug-eluting stent (DES) implantation is important to prevent late stent thrombosis;1–4 however, antiplatelet therapy may be stopped because of bleeding or at the instruction of other healthcare providers who are to perform an invasive or surgical procedure on the patient.5 This study evaluated the incidence of premature discontinuation of antiplatelet therapy after sirolimus-eluting stent (SES) implantation and subsequent adverse cardiac events.

From August 2004, SES implantation has been the default strategy in the Department of Cardiovascular Science and Medicine, Chiba University Graduate School of Medicine for every percutaneous coronary intervention (PCI) in lesions with a reference diameter 2.5–3.75 mm. SES was not used if (1) primary PCI was performed in patients with acute myocardial infarction (<48 h from onset), (2) patients were likely to require an invasive or surgical procedure within the next 12 months, (3) patients were not expected to comply with long-term antiplatelet therapy, (4) difficulty in delivery was anticipated, (5) there was a risk of bleeding, (6) any contraindications to antiplatelet therapy existed, or (7) patients preferred a bare metal stent. After written informed consent was given, PCI was performed according to current standard guidelines. This study was approved by the local council on human research. All patients received aspirin (100mg) once a day indefinitely. Ticlopidine (100mg twice daily) or clopidogrel (50 mg daily) was given for at least 3 months. If side-effects of thienopyridine occurred, it was replaced with cilostazol.

Baseline demographic and clinical data were obtained by review of the medical records and procedural reports. A health questionnaire was sent to all patients with the following specific questions: (1) was there any occasion for discontinuation of antiplatelet agents and, (2) if yes, when and why (ie, surgery, endoscopy with or without biopsy, dental procedure, bleeding, or non-adherence), (3) were there any adverse events after the discontinuation, and (4) was antiplatelet therapy restarted. A telephone interview was conducted if patients did not reply to the questionnaire or additional information was required. If patients underwent
staged PCI or SES deployment for SES restenosis, the time between the procedure and the cessation of antiplatelet therapy was calculated from the latest SES deployment to the discontinuation. Clinical follow-up data were also obtained from outpatient record reviews. General practitioners and referring cardiologists were contacted as necessary for additional information. The occurrence of major late clinical events was recorded, including death (all-cause or cardiac), myocardial infarction, and target lesion revascularization; these were adjudicated by accompanying source documentation. Stent thrombosis was defined as (1) the presence of acute coronary syndrome with angiographic or autopsy evidence of thrombus or occlusion, (2) unexplained death within 30 days after the procedure or (3) acute myocardial infarction involving the target-vessel territory without angiographic confirmation. Stent thrombosis was also classified as subacute (0–30 days) or late (>30 days).

Between August 2004 and March 2007, 254 patients with 332 lesions underwent SES implantation. Multivessel stenting, including staged PCI, was performed in 60 patients. In 9 patients, another SES was deployed to treat SES restenosis. Baseline clinical, angiographic, and procedural characteristics are shown in Table 1. Follow-up was complete for 97.2% of the population (mean 15.6±8.9 months). Premature discontinuation of antiplatelet therapy occurred for 46 patients (18.1%); twice in 8 patients and three times in 1 (Table 2).

### Table 2 Reasons and Timing of Discontinuation of Antiplatelet Therapy

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>≤30 days</th>
<th>31–90 days</th>
<th>91–365 days</th>
<th>&gt;365 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any discontinuation</td>
<td>56 (22.0%)</td>
<td>1 (0.4%)</td>
<td>5 (2.0%)</td>
<td>27 (10.6%)</td>
<td>23 (9.1%)</td>
</tr>
<tr>
<td>Thienopyridine + aspirin</td>
<td>35 (13.7%)</td>
<td>1 (0.4%)</td>
<td>5 (2.0%)</td>
<td>18 (7.1%)</td>
<td>11 (4.3%)</td>
</tr>
<tr>
<td>Clopidogrel + aspirin</td>
<td>1 (0.4%)</td>
<td>0</td>
<td>1 (0.4%)</td>
<td>0</td>
<td>Non-adherence 2 (0.8%)</td>
</tr>
<tr>
<td>Aspirin†</td>
<td>20 (7.9%)</td>
<td>0</td>
<td>0</td>
<td>8 (3.1%)</td>
<td>12 (4.7%)</td>
</tr>
<tr>
<td>Surgery</td>
<td>18 (7.1%)</td>
<td>0</td>
<td>0</td>
<td>9 (3.5%)</td>
<td>9 (3.5%)</td>
</tr>
<tr>
<td>Endoscopy with or without biopsy</td>
<td>18 (7.1%)</td>
<td>0</td>
<td>2 (0.8%)</td>
<td>8 (3.1%)</td>
<td>8 (3.1%)</td>
</tr>
<tr>
<td>Dental procedure</td>
<td>11 (4.3%)</td>
<td>0</td>
<td>2 (0.8%)</td>
<td>3 (1.2%)</td>
<td>6 (2.4%)</td>
</tr>
<tr>
<td>Bleeding</td>
<td>7 (2.8%)</td>
<td>0</td>
<td>0</td>
<td>7 (2.8%)</td>
<td>0</td>
</tr>
<tr>
<td>Non-adherence</td>
<td>2 (0.8%)</td>
<td>1 (0.4%)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

*Circulation Journal*  Vol.72, February 2008

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### References


