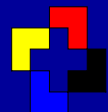


Clinical Relevance Of Clopidogrel-hyporesponse To Subacute Stent Thrombosis

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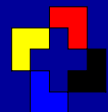
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- St. Johannes-Hospital, Dortmund, Germany



Background

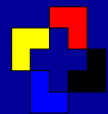
Reduced Clopidogrel (Clo)-Response →
Significantly worse cardiovascular outcome:

- STEMI: Matetzky et al., *Circulation* 2004
- Stable angina (elective PCI) and Acute Coronary Syndrome (ACS):
Geisler et al., *Eur Heart J* 2006
- Stable angina (elective PCI):
Müller et al., *Thromb Haemost* 2003;
Hochholzer et al., *J Am Coll Cardiol* 2006



Background

- Identification of patients (pts.) with Clo-hyporesponse undergoing PCI
- Cutoff value of Clo-response/hyporesponse?



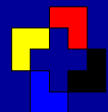
Methods 1

- 34 months; 30 days follow up
- 2847 consecutive pts. (mean age $63,5 \pm 10$ y, 67% male, 33% female) undergoing PCI with stent placement (BMS/DES):
 - 1907 (67%) chronic stable angina
 - 940 (33%) ACS
- Analysing of platelet aggregation 6-24 hours after application of 600 mg Clopidogrel (loading dose)

Rationale:

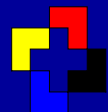
Müller et al., *Heart* 2001 (after 4 h)

Hochholzer et al., *Circulation* 2005 (after 2 h)



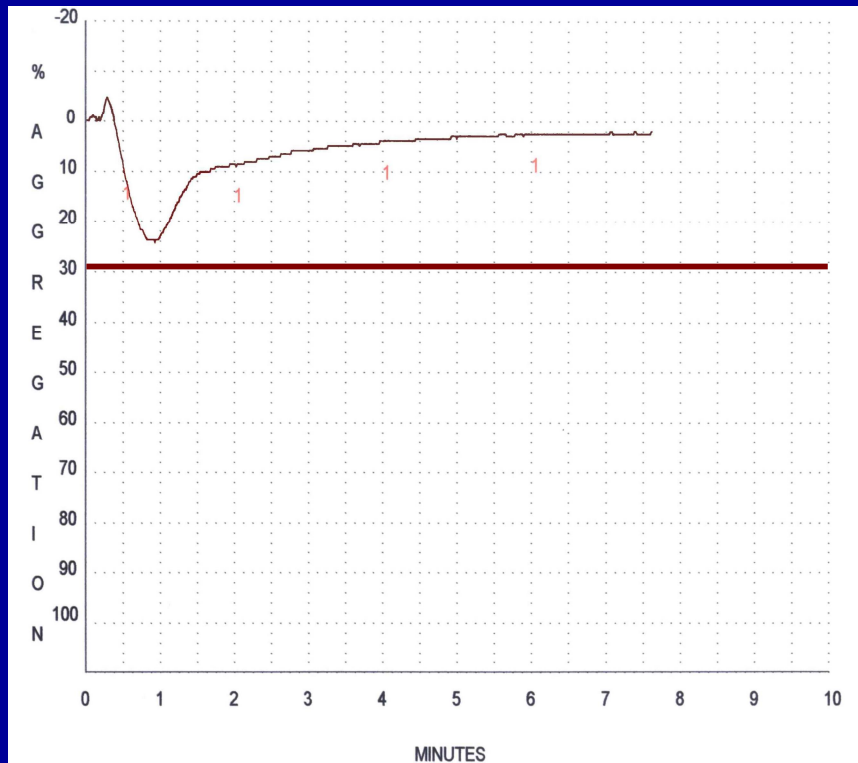
Methods 2

- Photometric measuring of platelet aggregation with conventional aggregometer PAP 4 by möLAB, Hilden, Germany
- platelet aggregation induced by 20 $\mu\text{mol/L}$ ADP to citrate plasma

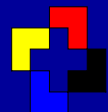
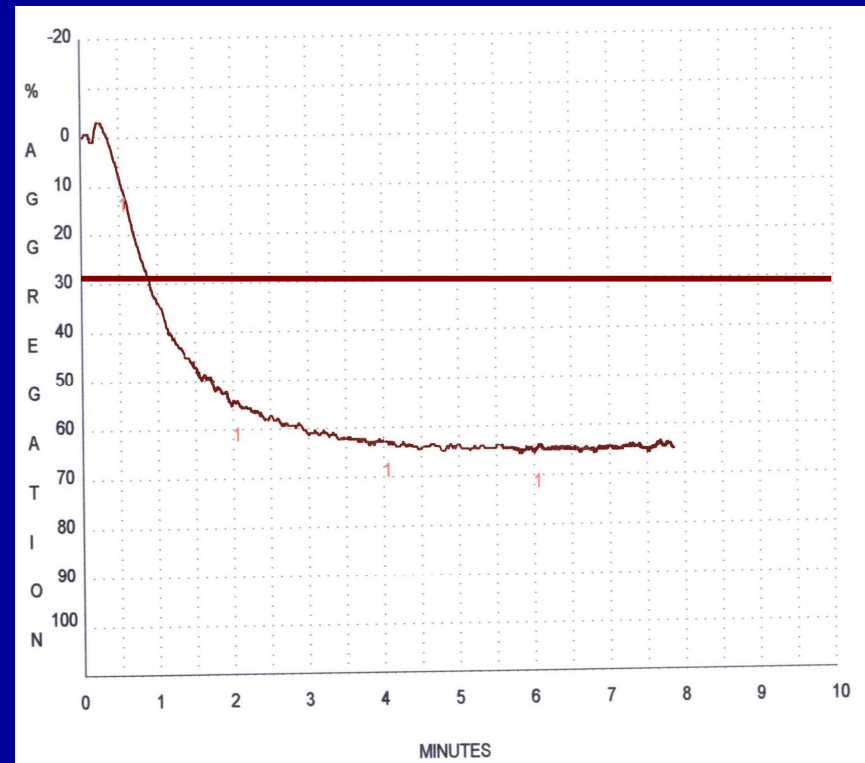


Methods 3

Clopidogrel-responder

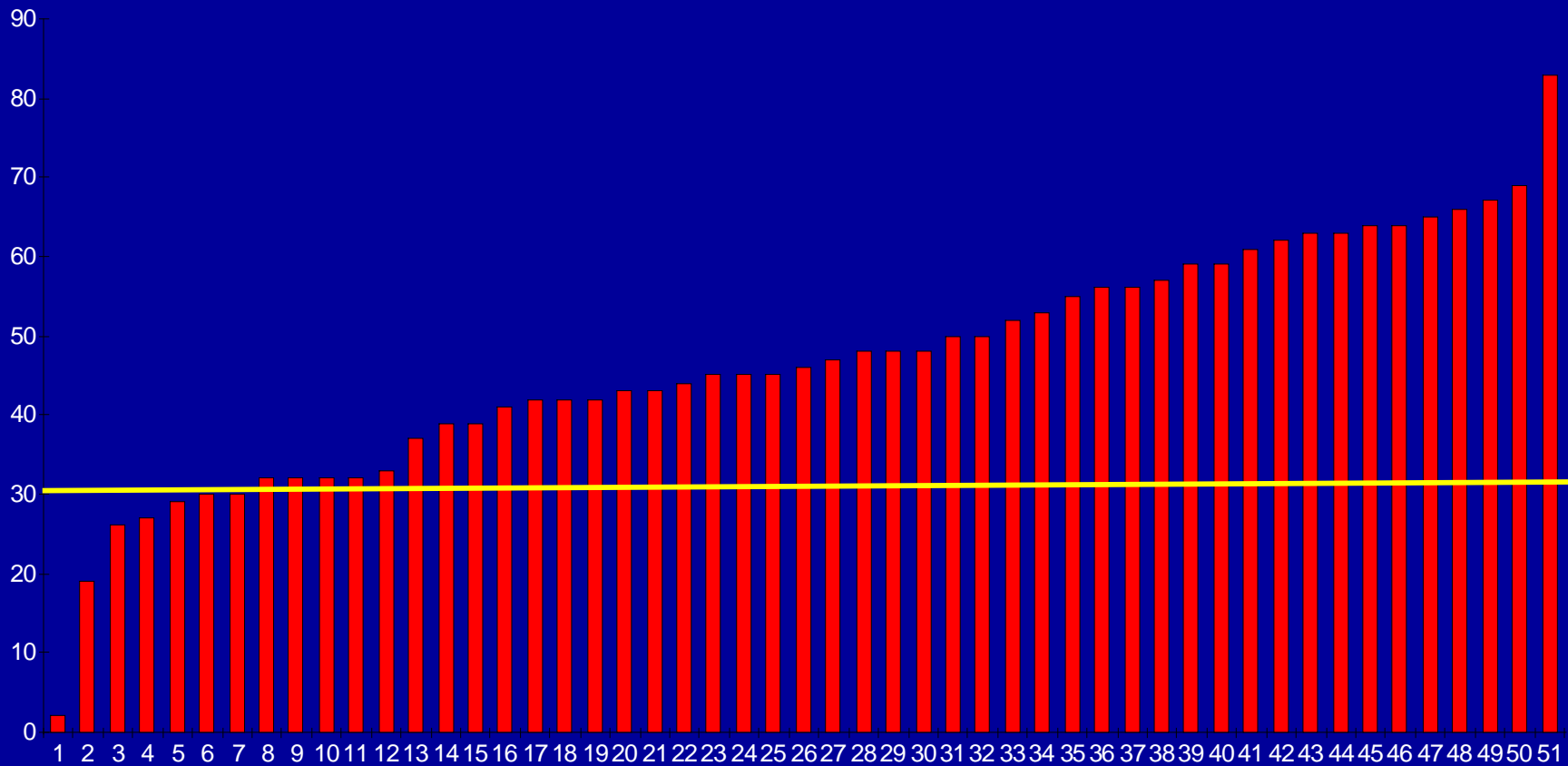


Clopidogrel-hyporesponder



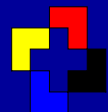
Results 1

final aggregation [%]



number of patient [n]

Figure 1: Final aggregation of all patients with subacute stent thrombosis



Results 2

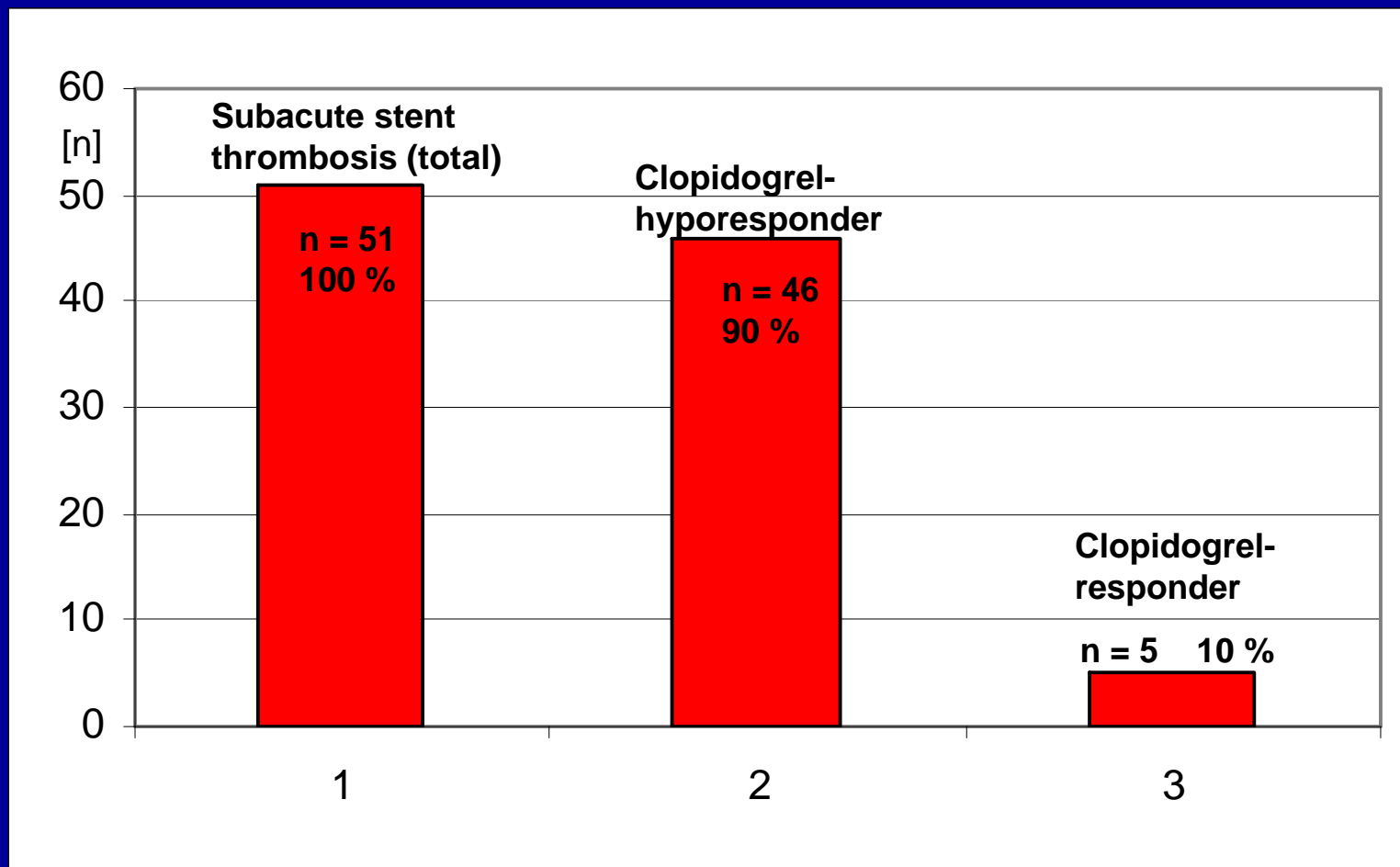
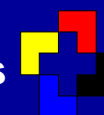


Figure 2: Distribution of Clo-hyporesponders and subacute stent thrombosis



Results 3

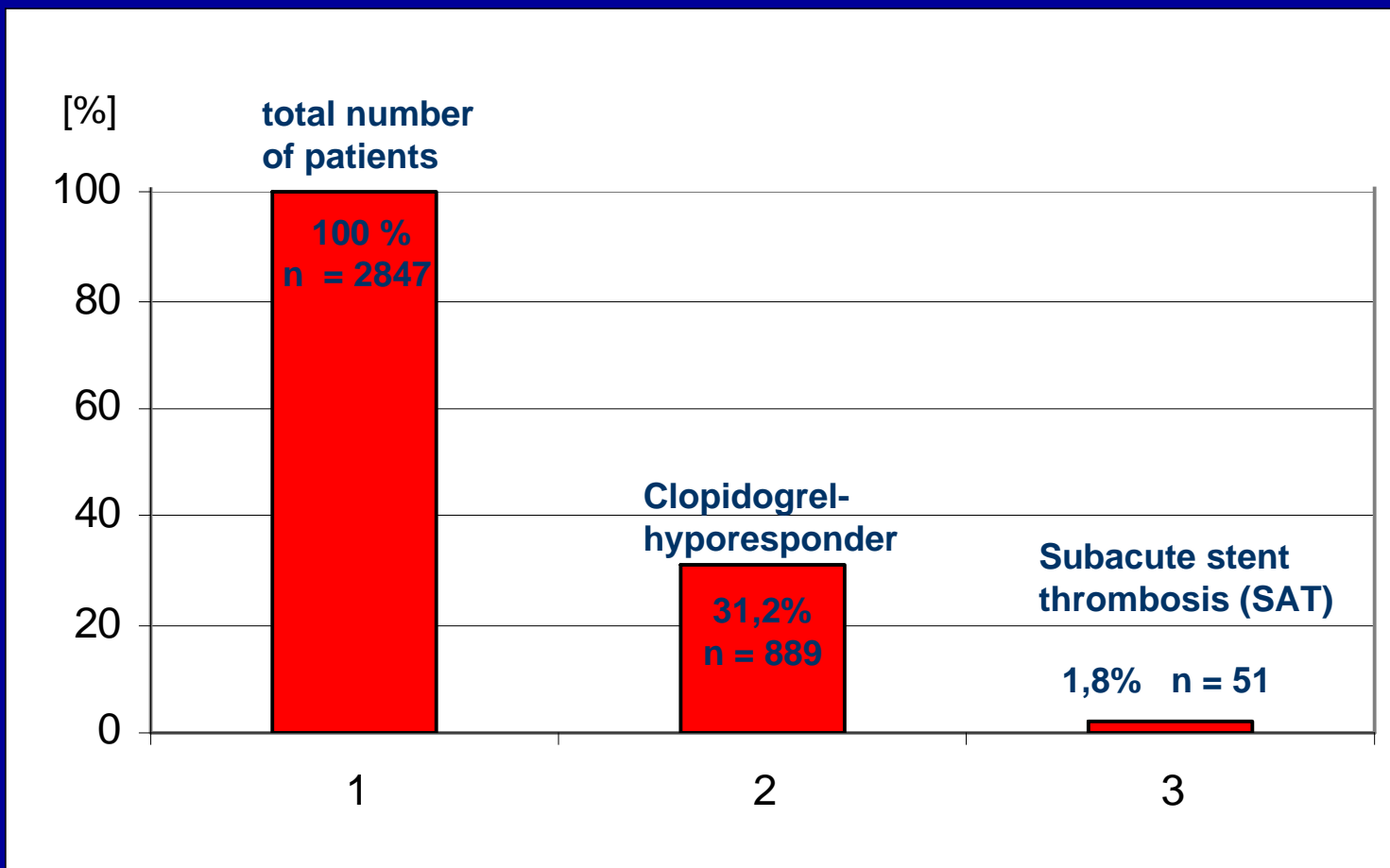
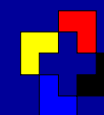
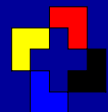


Figure 3: Distribution of Clo-responders, Clo-hyporesponders and SAT

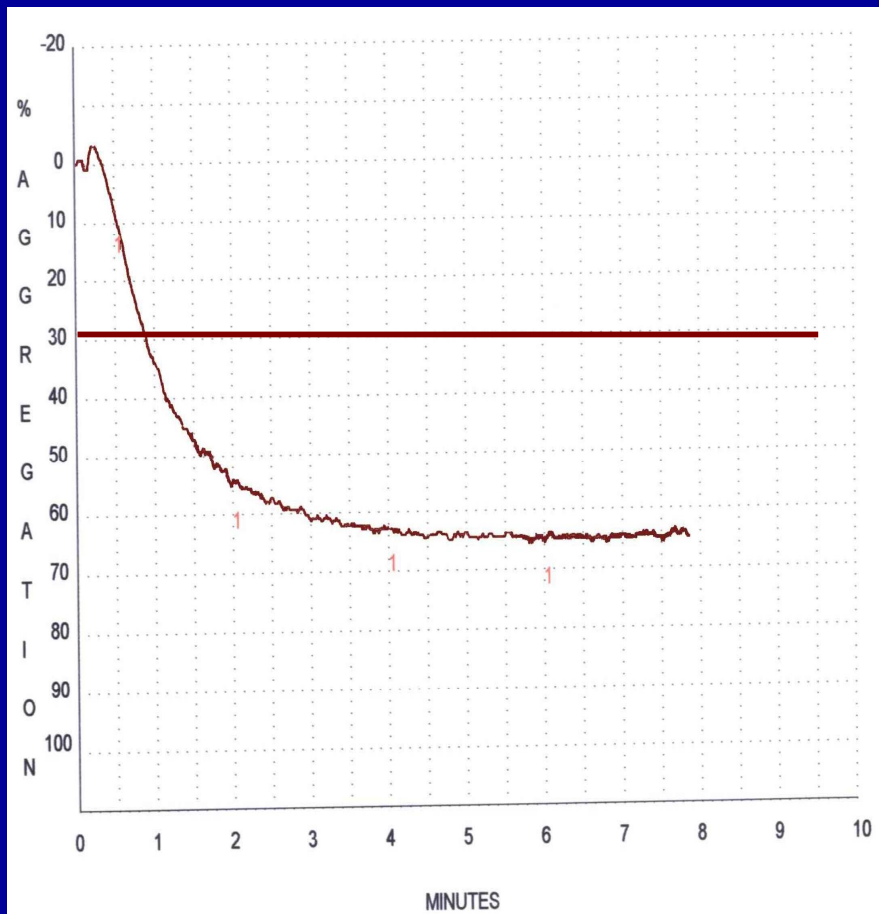


Conclusions

1. Clopidogrel-hyporesponders have a significantly increased risk of subacute stent thrombosis after PCI with stent placement
2. Cutoff value: 90% of these endangered patients are identified with final aggregation $> 30\%$ resp. platelet inhibition $< 70\%$
3. Prospects: Change of antiplatelet strategy, e. g.:
 - increased doses of Clopidogrel
 - new ADP-antagonists: Prasugrel



75 mg Clopidogrel



150 mg Clopidogrel

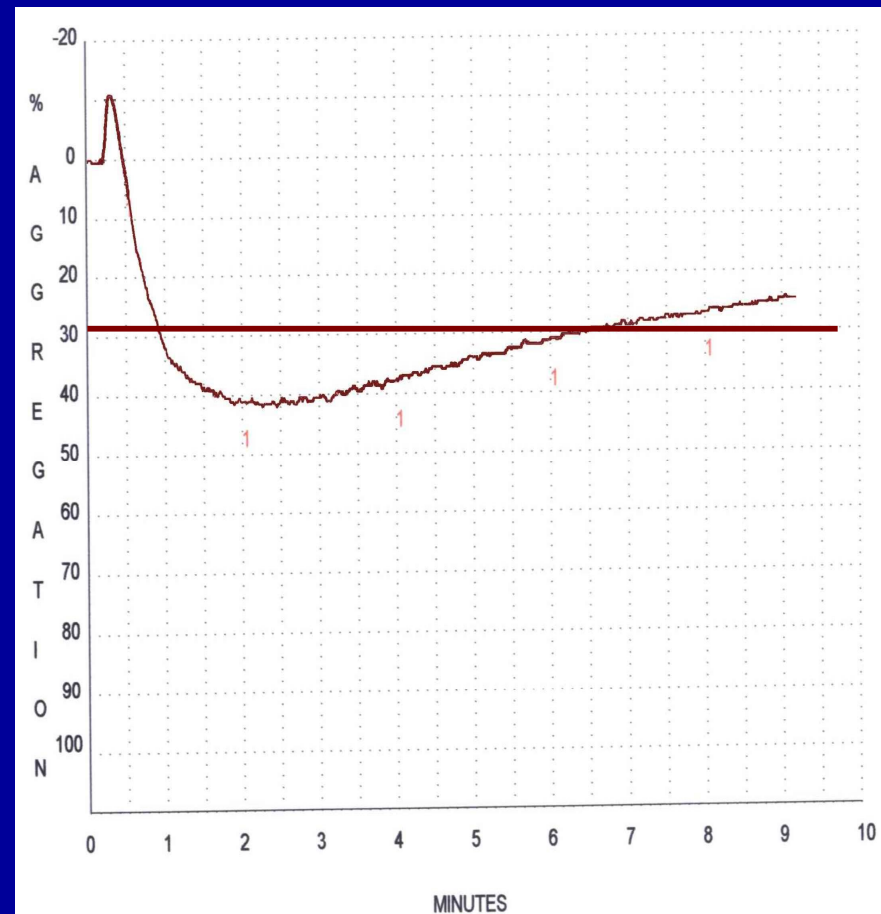


Figure 4: Increased dose of Clopidogrel (per day)

