

PFO

bei Stroke und Migräne

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PFO

License to Kill

***PFOO* 75**

PFO and Migraine

MIST Serious Adverse Events

74 patients

implant group

tamponade

pericardial effusion

retroperitoneal bleed

atrial fibrillation

chest pain

73 patients

sham group

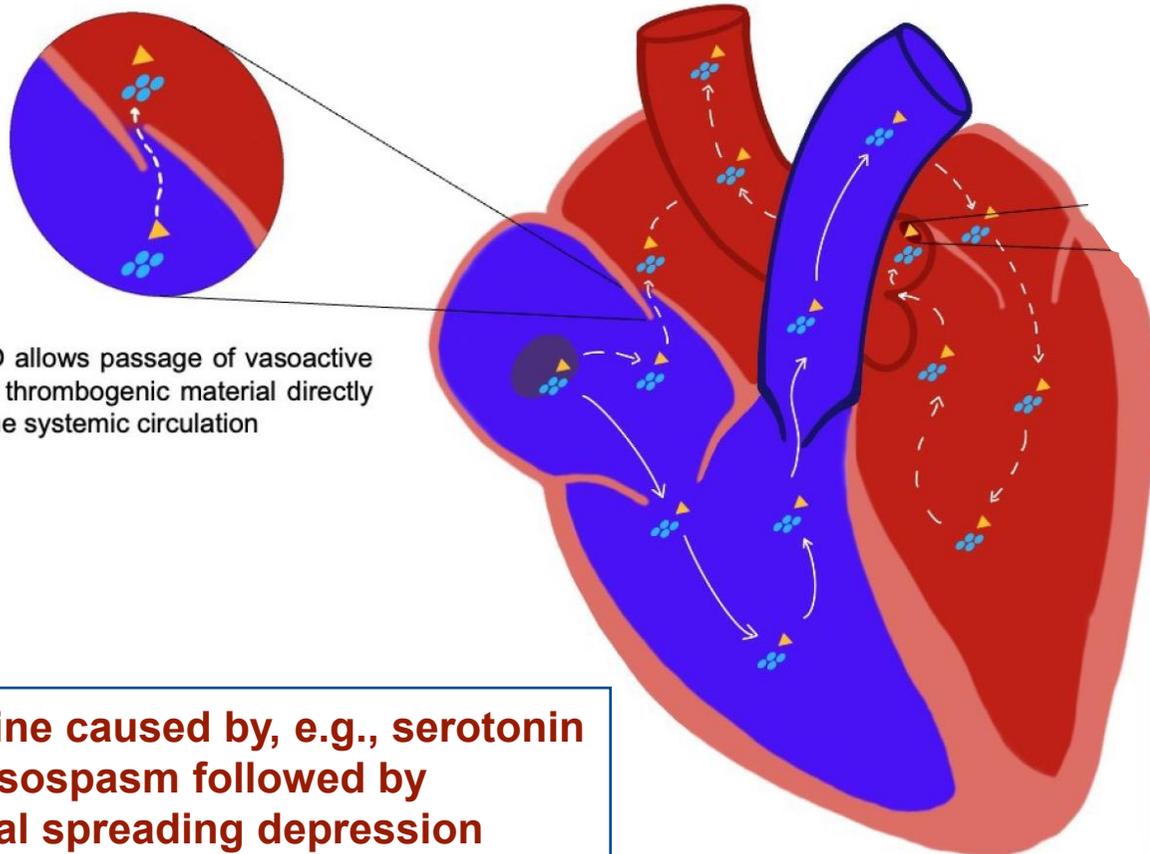
incision site bleed

anemia

nose bleed

brainstem stroke

Migraine, Vasospastic Angina Pectoris, or Takotsubo Caused by PFO



PFO allows passage of vasoactive and thrombogenic material directly to the systemic circulation

Migraine caused by, e.g., serotonin via vasospasm followed by cortical spreading depression

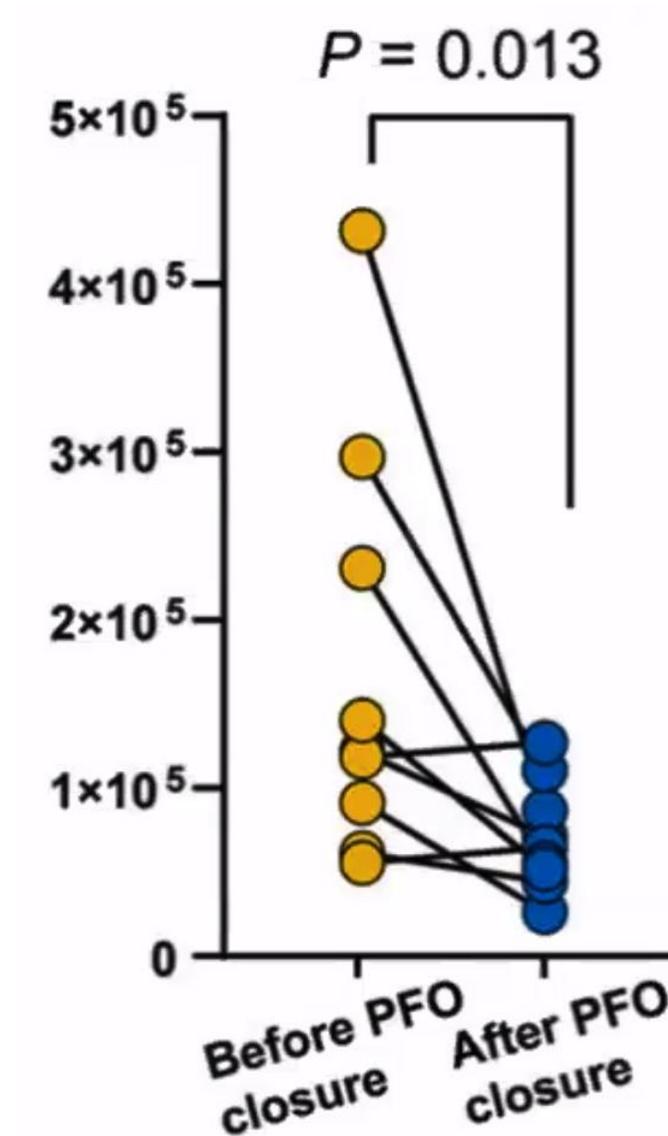
Vasoactive substances e.g. calcitonin gene-related peptide (CGRP), pituitary adenylate cyclase-activating polypeptide (PACAP), and serotonin

Thrombotic material

Migräne und PFO

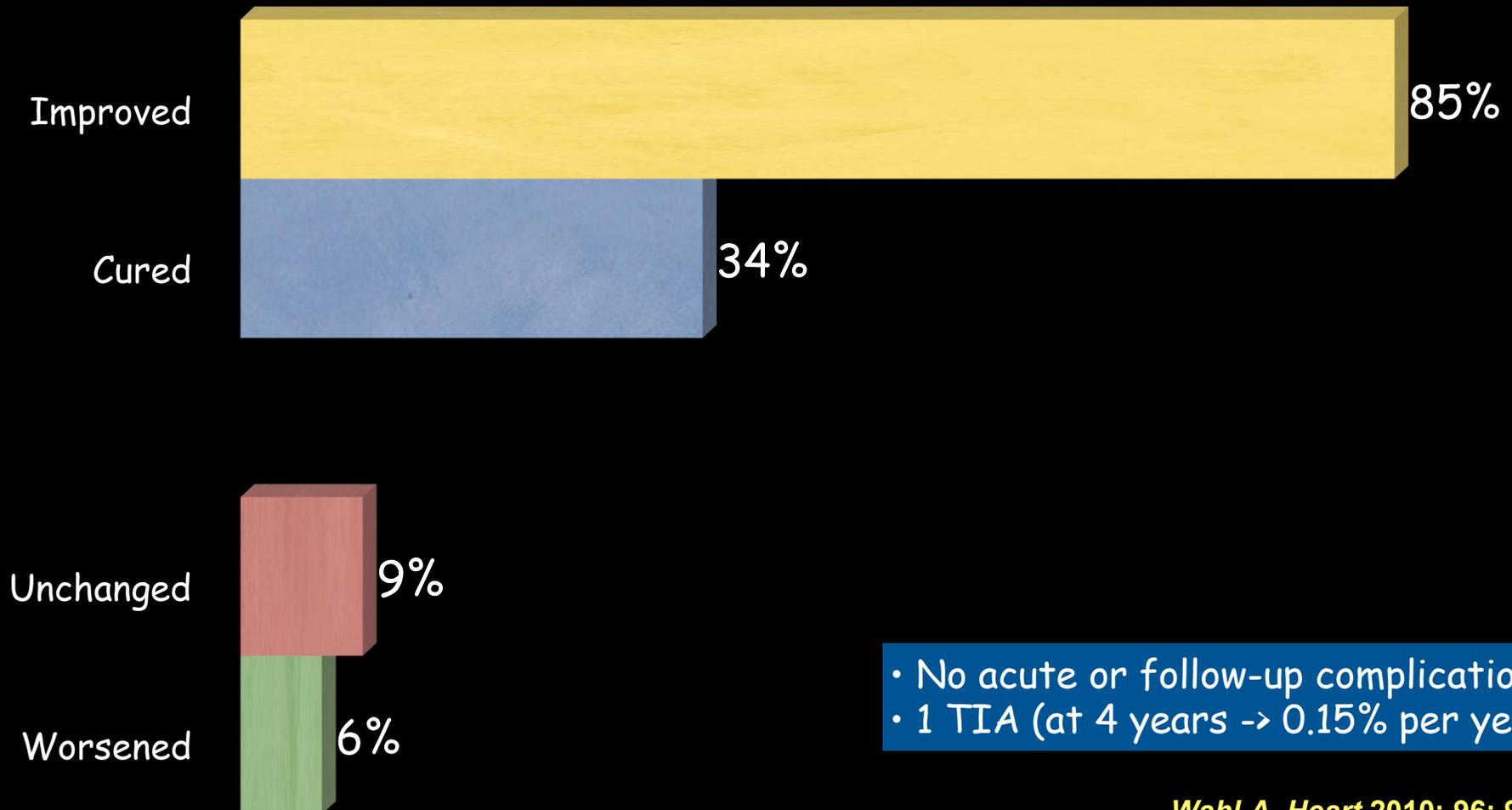
Dong B, J Physiol. 2025;603:809-835

Arterielle Serotoninspiegel vor und nach PFO Verschluss



PFO and Migraine (Bern Experience)

- 603 consecutive patients with Amplatzer PFO occlusion for reasons other than migraine
- 150 patients had migraine (25%), 64% of them with aura
- Age 51±11 years
- Males 61%
- Follow-up 5±2 years
- Clopidogrel ≤1 month, acetylsalicylic acid ≤6 months
- 91% complete closure by 6-month TEE (3% moderate or large residual shunt)

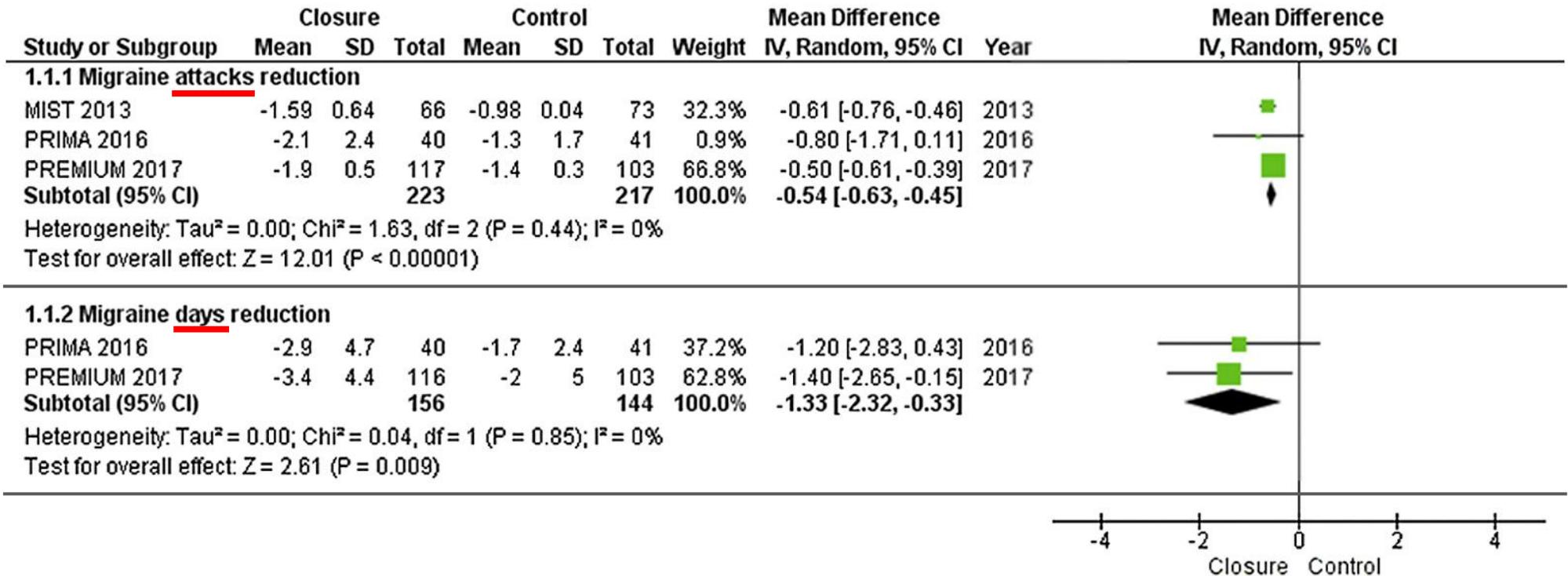


- No acute or follow-up complications
- 1 TIA (at 4 years → 0.15% per year)

PFO and Migraine

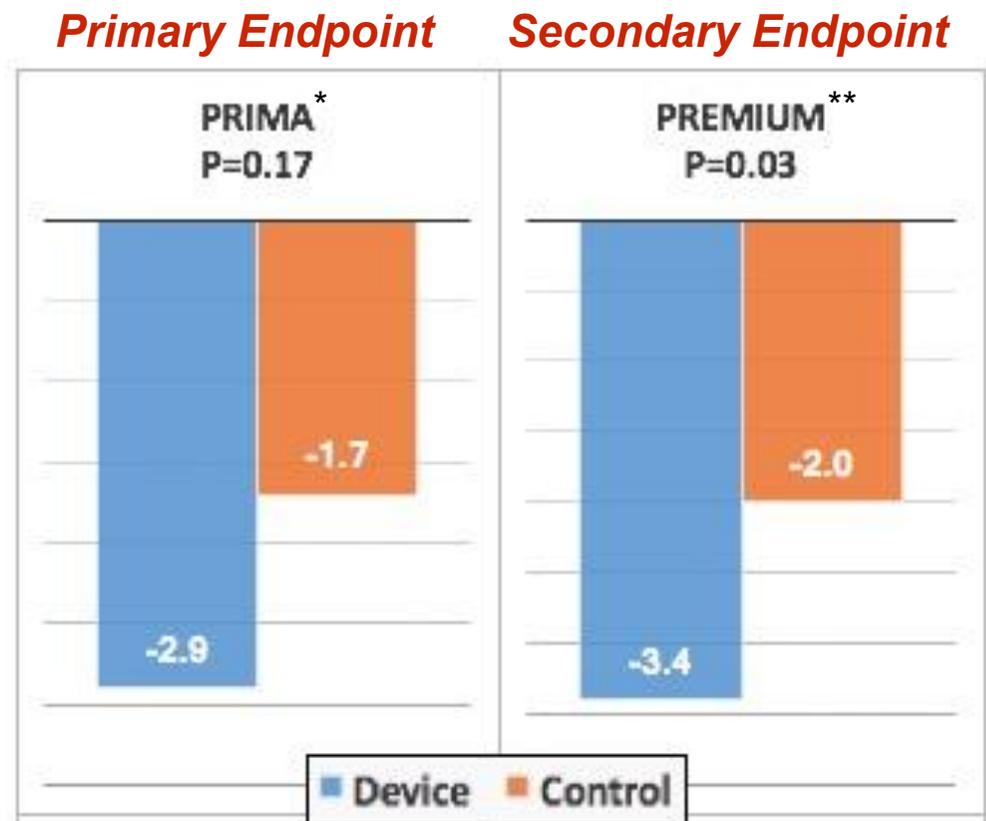
Randomized Trials Meta-Analysis

Migraine Reduction



Effect of Amplatzer PFO Closure on Migraine at 1 Year in Randomized Trials

Reduction in monthly migraine days



Meier B, Dtsch Med Wochenschr 2018;143:354–356

* 80 pts, Mattle HP, Eur Heart J 2016;37:2029-2036

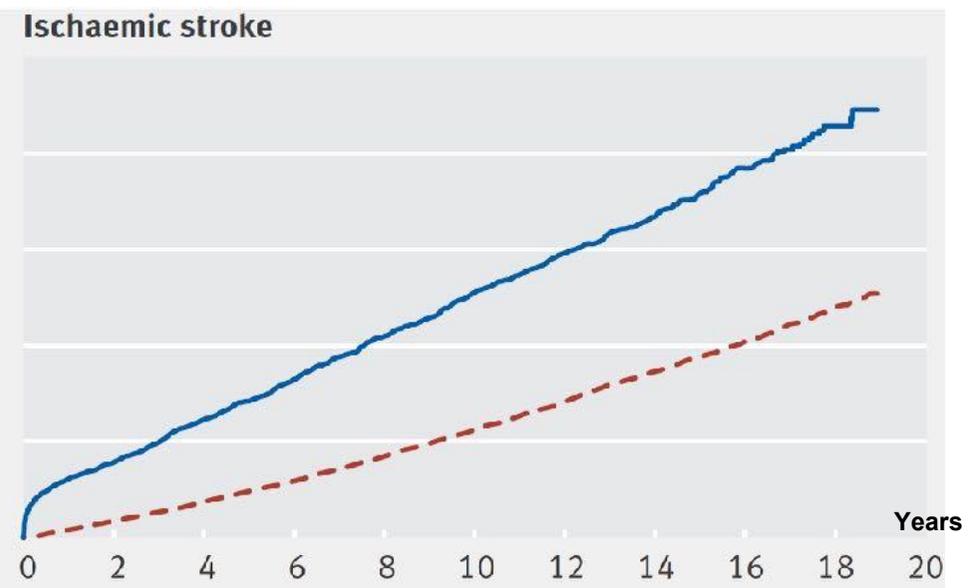
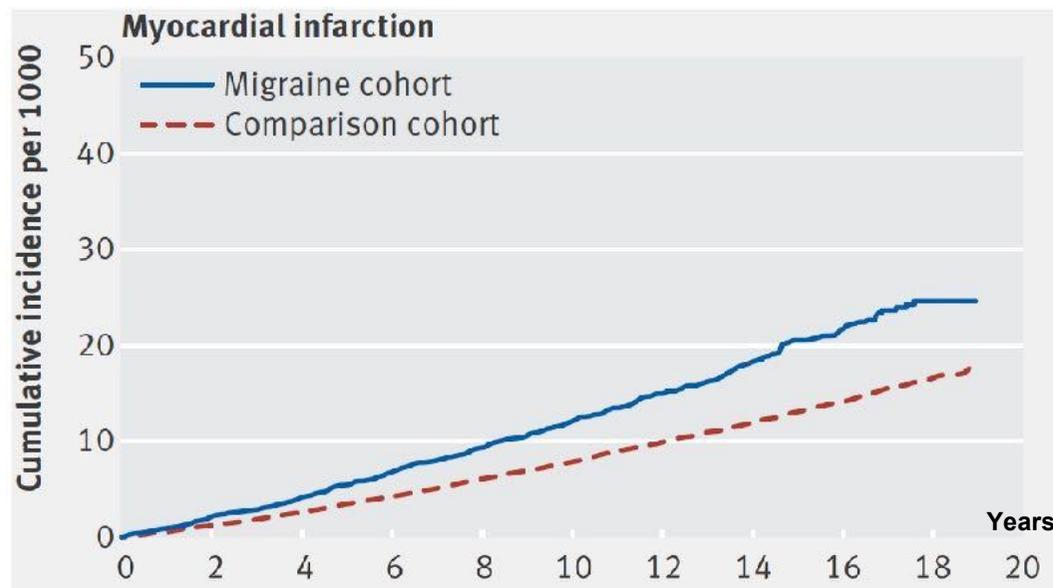
** 220 pts, Tobis JM, J Am Coll Cardiol 2017;70:2766–2774

Migraine and risk of cardiovascular diseases

Danish population based matched cohort study

PFO mentioned but no recommendation to screen for it

- 51 032 patients with migraine
- 510 320 people from the general population in Denmark, matched on age, sex, and calendar year



PFO

Sehen wir nur die Spitze des Eisbergs?



**Kryptogener Hirnschlag
< 60 Jahre**