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**INDEPENDENT PATIENT DATA META-ANALYSIS OF
PROPHYLACTIC MESH PLACEMENT FOR INCISIONAL HERNIA
PREVENTION (AFTER ABDOMINAL AORTIC ANEURYSM
SURGERY): A COLLABORATIVE EUROPEAN HERNIA SOCIETY
PROJECT (I-PREVENT-AAA)**

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Introduction: Incisional hernia (IH) is a prevalent and potentially dangerous complication after abdominal surgery, especially in high-risk groups. Prophylactic mesh augmentation (PMA) of the abdominal wall has been studied as a preventive measure for IH-formation, but strong recommendations are lacking. Our primary aim was to evaluate the effectiveness of the use of PMA after open abdominal aortic aneurysm (AAA)-surgery for the prevention of IH by performing an individual patient-data meta-analysis (IPDMA). Secondary aims include evaluation of postoperative complications, and identification of subgroups that benefit most from PMA.

Methods: A systematic literature search to identify Randomized-Controlled Trials (RCTs) that compare PMA after open AAA surgery to primary suturing (PS), was conducted. Lead authors of eligible studies were asked to share individual participant-data. A one-stage analysis was performed and Cox-regression analyses were used to assess time-to-event outcomes.

Results: Five RCTs were included in our IPDMA, which resulted in 488 analysed patients. PMA resulted in a Hazard Ratio (HR) of 0.25 (95%CI 0.12–0.50) for the reduction of IH occurrence. No significant differences were present when comparing onlay with sublay mesh (HR 0.56, 95% CI 0.24–1.28). Patients treated with an onlay mesh had significantly more seroma formation in comparison to PS (OR 22.1, 95%CI 1.88–259.58) and patients with a sublay mesh had fewer re-operations than those treated with PS (OR 0.47, 95%CI 0.43–0.51). Subgroup analyses showed the effectiveness of PMA in various subgroups (e.g., high BMI patients).

Conclusion: PMA after open AAA surgery is an effective measure to reduce IH formation in a wide variety of patients.