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
Original Investigation

Anders Holt, Jarl E. Strange, Nina Nouhravesh, Sebastian Kinnberg Nielsen, Mariam Elmegaard Malik, Anne-Marie Schjerning, Lars Køber, Christian Torp-Pedersen, Gunnar H. Gislason, Patricia McGettigan, Morten Schou, and Morten Lamberts

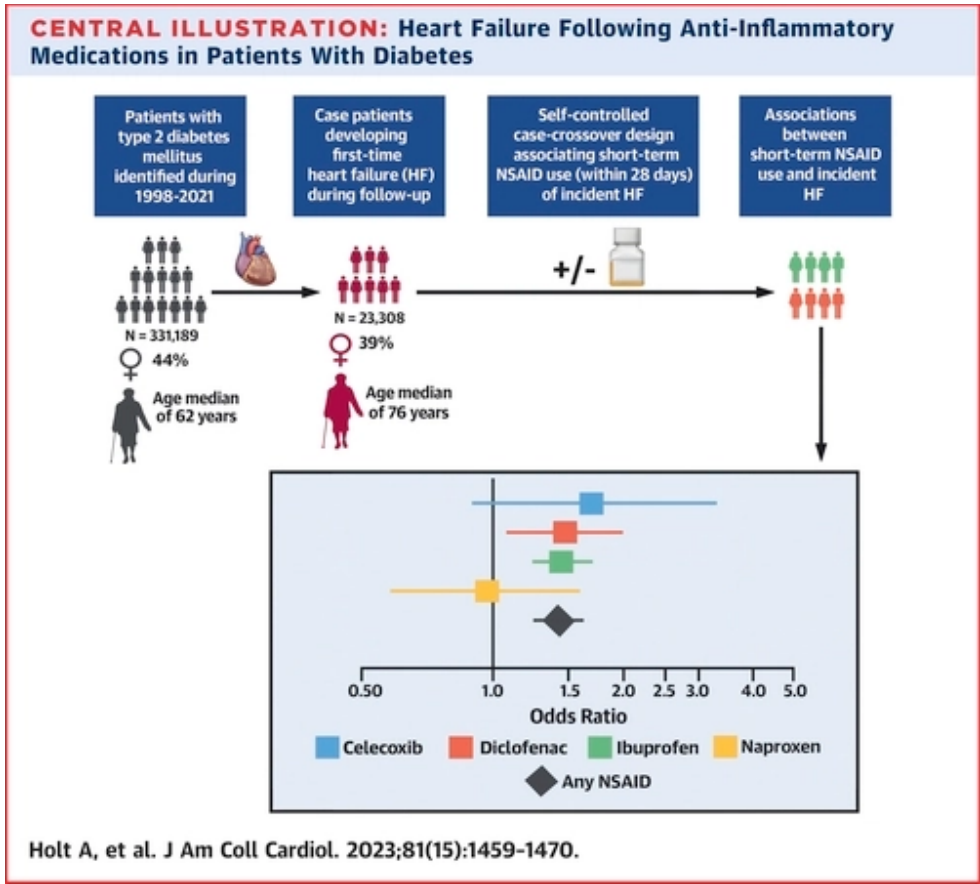
J Am Coll Cardiol. 2023 Apr, 81 (15) 1459–1470

Editorial Comment: [Nonsteroidal Anti-Inflammatory Drugs and Type 2 Diabetes: A Recipe for Heart Failure?*](#)

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Central Illustration



Abstract

Background

Fluid retention and endothelial dysfunction have been related to use of nonsteroidal anti-inflammatory drugs (NSAIDs), and type 2 diabetes mellitus (T2DM) has been linked to both a decline in kidney function and subclinical cardiomyopathy.

Objectives

The authors hypothesized that short-term use of NSAIDs could lead to subsequent development of incident heart failure (HF) in patients with T2DM.

Methods

Using nationwide Danish registers, we identified patients diagnosed with T2DM during 1998 to 2021 and included patients without previous HF, rheumatic disease, or use of NSAIDs 120 days before diagnosis. Associations between NSAIDs and first-time HF hospitalization were investigated using a case-crossover design with 28-day exposure windows, and ORs with 95% CIs were reported.

Results

Included were 331,189 patients with T2DM: 44.2% female, median age of 62 years (IQR: 52-71 years); 23,308 patients were hospitalized with HF during follow-up, and 16% of patients claimed at least 1 NSAID prescription within 1 year. Short-term use of NSAIDs was associated with increased risk of HF hospitalization (OR: 1.43; 95% CI: 1.27-1.63), most notably in subgroups with age ≥80 years (OR: 1.78; 95% CI: 1.39-2.28), elevated hemoglobin (Hb) A1c levels treated with 0 to 1 antidiabetic drug (OR: 1.68; 95% CI: 1.00-2.88), and without previous use of NSAIDs (OR: 2.71; 95% CI: 1.78-4.23).

Conclusions

NSAIDs were widely used and were associated with an increased risk of first-time HF hospitalization in patients with T2DM. Patients with advanced age, elevated HbA1c levels, and new users of NSAID seemed more susceptible. These findings could guide physicians prescribing NSAIDs.

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