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A shift towards personalized COPD management?

Summary by RAMON ELIZONDO MD

In a British study that could change the face of respiratory medicine, researchers have boldly questioned the traditional use of systemic steroids for acute exacerbations of chronic obstructive pulmonary disease (COPD). In 2014, a Cochrane meta-analysis affirmed the efficacy of systemic steroids in curbing short-term treatment failures and reducing the hospitalization duration for non-ventilated COPD patients. It showed that steroids hastened symptom relief but did not improve survival rates. For every five patients treated, one experienced harm.

Study population

This study zoomed in on adults over 40 years old with a history of significant smoking and a confirmed diagnosis of COPD, evidenced by a specific lung function ratio (FEV1/FVC < 0.7). These individuals had suffered at least one steroid-requiring exacerbation in the prior year.

Intervention

High eosinophil counts triggered a 30 mg prednisolone prescription, while low counts resulted in a placebo. This personalized treatment was pitted against the conventional method, where all patients received prednisolone regardless of their eosinophil levels.

Outcomes

The primary outcome was the treatment failure rate at the 30-day mark, encompassing re-treatment, hospitalization, or death. Safety profiles and the number of adverse events were also scrutinized, alongside each approach's effectiveness in staving off further medical interventions and hospital stays.

Findings

The study concluded that the eosinophil-guided therapy did not fall short of standard care, potentially signaling a method to cut back on systemic glucocorticoid use safely. The tailored approach showed a marginal decrease in treatment failures compared to the standard regimen, although this difference didn't reach statistical significance.

Strengths and weaknesses

The study's strengths lie in its rigorous randomized controlled design and the potential of its intervention to reduce the side effects associated with steroid use. Weaknesses include sample size issues due to randomization errors, potential lack of generalizability beyond the UK primary care setting, and the absence of ethnic diversity data. Additionally, relying on eosinophil counts as a binary guide for treatment might not suit all clinical nuances.

In essence, the study advocates for a shift towards more personalized COPD management, although further research is needed to confirm these findings and their applicability to a broader patient population.

To read the full article, go to: The Lancet. Jan 2024. Vol 12. I 1. P 67-77
[https://doi.org/10.1016/S2213-2600\(23\)00298-9](https://doi.org/10.1016/S2213-2600(23)00298-9)

Relearning the role of beta-blockers in myocardial infarction

Summary by DIANA OTHON-MARTINEZ MD, AND EDGAR DORSEY MD

Mrs. Deborah was hospitalized due to a minor myocardial infarction (MI) and has a left ventricular ejection fraction of 60 – 65%; she is ready to be discharged. But wait before handing over those discharge meds. Did beta blockers just waltz into your mind? Well, it might be time to dust off the old medical rulebook and add a sprinkle of new-age wisdom!

Now, let us talk about beta blockers. The evidence backing their heart-protective prowess has a couple of wrinkles. First, past studies included patients with large MIs and serious ventricular dysfunction, a far cry from Mrs. Deborah's situation. Second, those trials? Yeah, they're so last century (1980), back when shoulder pads were in and medical tech was... let's just say, not as flashy. These discrepancies questioned the cardioprotective effect of beta blockers for patients such as Mrs. Deborah, who had an MI with a preserved ejection fraction.

To evaluate the cardioprotective effect of beta-blockers on patients with an MI and a preserved ejection fraction, Yndigeegn and colleagues conducted the pragmatic, open-label, registry-based, randomized **REDUCE-AMI** trial. Their primary endpoint was a composite of death from any cause and new myocardial infarction. In contrast, their secondary outcomes were death from any cause, death from cardiovascular causes, myocardial infarction, hospitalization for atrial fibrillation, and hospitalization for heart failure.

They used metoprolol and bisoprolol against a no-beta-blocker group, all to see who would come out on top in the heart-health Olympics. After following over 5,000 patients for a median of 3.5 years, the big reveal: **NO DIFFERENCE** in the primary and secondary outcomes!

The REDUCE-AMI results are like a plot twist in a medical drama, challenging the old belief that beta blockers are the superheroes for all heart situations. It is a game-changer that might just nudge the guidelines and policymakers to rethink treatment for MI and preserved ejection fraction.

To read the full article go to: New England Journal of Medicine: April 2024. Vol 390 N 15.
<https://www.nejm.org/doi/10.1056/NEJMoa2401479>

Invasive vs conservative management of chronic coronary disease

Summary by JIAN GARCIA-CRUZ MD, and EUNBEE CHO MD

Chronic coronary disease (CCD) is defined as the heterogeneous group of conditions that includes obstructive and nonobstructive coronary artery disease with or without previous myocardial infarction or revascularization, ischemic heart disease diagnosed only by noninvasive testing, and chronic angina syndromes with varying underlying causes.

Conservative management of CCD typically involves a combination of lifestyle modifications, pharmacological treatments, and close monitoring:

1. Lifestyle changes such as smoking cessation, regular exercise, a heart-healthy diet, and weight management.
2. Pharmacological treatments may include antiplatelet agents, cholesterol-lowering medications, beta-blockers, angiotensin-converting enzyme inhibitors, or calcium channel blockers, which help manage symptoms and reduce the risk of further coronary events.
3. Regular monitoring of heart health through clinical visits and diagnostic tests to assess the disease's progression and the management strategy's effectiveness.

Invasive treatments for CAD typically include procedures like angioplasty and stent placement, as well as coronary artery bypass grafting (CABG). Invasive treatments for coronary artery disease are usually considered when lifestyle changes and medications alone are not effectively controlling symptoms or when the disease progresses to a point where it poses a significant risk of complications such as heart attack or heart failure. Factors that may prompt invasive treatment include severe blockages in coronary arteries, persistent angina, or a high risk of heart attack based on diagnostic tests. Ultimately, the decision to pursue invasive treatment is made based on a careful evaluation of the individual patient's medical history, symptoms, risk factors, and the severity of their CAD. Contraindications for invasive treatment of CAD vary depending on the specific procedure and the individual patient's health status. Some general contraindications may include:

1. Severe medical conditions that increase the risks associated with the procedure, such as advanced kidney disease, liver disease, or severe respiratory conditions.
2. Active infections or systemic illness that could increase the risk of complications during or after the procedure.
3. Bleeding disorders or the use of blood-thinning medications that increase the risk of excessive bleeding during the procedure.
4. Severe heart failure or other conditions that make the risks of the procedure outweigh the potential benefits.
5. Certain anatomical factors that make the procedure technically challenging or increase the risk of complications, such as severe vessel tortuosity or calcification.

The Seattle Angina Questionnaire (SAQ) is a validated tool used to assess the impact of coronary artery disease on a patient's quality of life, particularly focusing on angina symptoms and their effects on daily activities. It consists of 19 questions across five domains:

1. Physical limitation.
2. Angina stability.
3. Angina frequency.
4. Treatment satisfaction.
5. Quality of life.

Each question is scored on a scale from 1 to 5 or 6, with higher scores indicating better functioning and fewer limitations due to angina. The SAQ is commonly used in clinical research and practice to assess the effectiveness of treatments for CAD and to guide clinical decision-making. This questionnaire is a valid tool to decide between invasive vs conservative treatment. The decision to proceed with invasive treatment should always be made on a case-by-case basis, weighing the potential risks and benefits for each individual patient.

To read the full article go to: Journal of the American College of Cardiology: April 2023. Vol 83 | 16. P 1353-1366. <https://doi.org/10.1016/j.jacc.2024.02.019>

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