

Student Name

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NR 567-Advanced Pharmacology for the Adult Gerontology Acute Care Nurse Practitioner



Week 3: Clinical Decision-Making Discussion

1.) Explain why an Ace Inhibitor is recommended for a patient who has just experienced an ST-Elevation Myocardial Infarction (STEMI).

According to Lee et al (2023), in comparison to other classes of anti-hypertensive medications, especially angiotensin receptor blockers (ARBs), angiotensin-converting enzyme inhibitors (ACEIs) are recommended as first line therapy in patients with acute myocardial infarction (MI) as there is concern of ARBs increasing MI in hypertensive patients. ACEI is also recommended in patients with multiple conditions, such as ST- Elevation MI (STEMI), non-STEMI (NSTEMI), anterior infarction, heart failure (HF), left ventricular (LV) systolic dysfunction, and diabetes mellitus (DM) (unless contraindicated) (Lee et al, 2023). According to Goyal et al (2022), the use of ACEIs are recommended by HF guidelines for the prevention of HF in patients with a reduced ejection fraction (EF), those who have a history of MI, as well as to treat patients with both HF and a reduced EF. According to Goyal et al (2022), the American College of Cardiology recommends the initiation of ACEIs within 24 hours of all STEMI, which is specifically in patients with anterior MI, HF, or LV EF of 40% or less. This recommendation is derived from evidence proving the effectiveness ACEIs have on the overall reduction of mortality in multiple conditions, such as hypertension, HF, acute MI, and DM (Goyal et al, 2022). According to Rincon-Choles (2019), one other explanation for why ACEIs have been recommended as first-line therapy for STEMI and other conditions compared to ARBs by most guidelines “was thought to be a result of a greater vasodilatory effect caused by inhibiting the degradation of bradykinin and leading to increased levels of nitric oxide and vasoactive prostaglandins” (p. 608). According to Kim et al (2019), some other benefits of ACEIs are for its role in lowering blood pressure, reducing the progression of atherosclerosis, enhancing endothelial function, and cardiovascular remodeling, all of which leads to improvement on cardiovascular outcomes such as MI or HF.