

Angiotensin-converting enzyme inhibitors can be a risk factor for lung cancer!!



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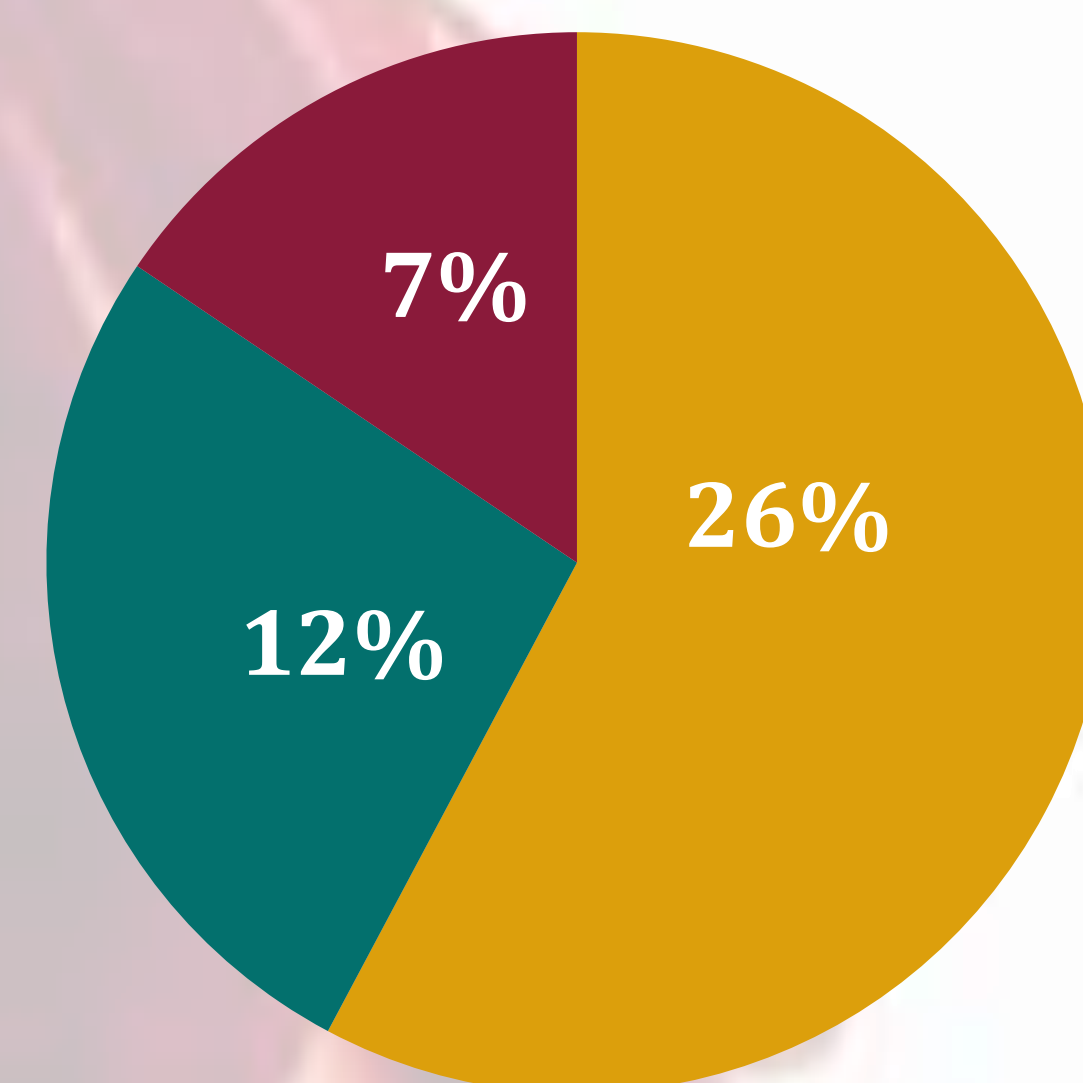


INTRODUCTION:

- Angiotensin converting enzyme inhibitors (ACE inhibitors) are medications that inhibit the activity of the enzyme ACE, which decreases the production of angiotensin II. As a result, blood vessels dilate, and blood pressure is reduced, they are effective drugs used in the treatment of hypertension[1]. Although these drugs have been shown to be relatively safe in the short term, concerns have been raised that their long term use may be associated with an increased risk of cancer. [2], Some biological evidence exists for a possible association between ACEIs and risk of lung cancer.
- Lung cancer is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung. The two main types are small-cell lung carcinoma (SCLC) and non-small-cell lung carcinoma (NSCLC)

The three most commonly used ACEIs

- ramipril (257 420 patients)
- lisinopril (120 641 patients)
- perindopril (70 955 patients)



HOW ANGIOTENSIN-CONVERTING ENZYME INHIBITORS CAUSE LUNG CANCER!

- ✓ ACEIs are one of the most widely prescribed drug classes; in the UK, 70.1 million antihypertensives are dispensed each year, of which approximately 32% are ACEIs. Thus, small relative effects could translate into large absolute numbers of patients at risk for lung cancer

- ✓ The association between ACEIs and lung cancer is biologically plausible. In addition to angiotensin I, angiotensin converting enzyme also metabolizes bradykinin, an active vasodilator. Thus, the use of ACEIs results in the accumulation of bradykinin in the lung. Bradykinin receptors have been located on various cancerous tissues including lung cancer, and bradykinin may directly stimulate growth of lung cancer. Bradykinin has been shown to stimulate the release of vascular endothelial growth factor, thus promoting angiogenesis, as well as having indirect effects on lung cancer by enhancing vascular permeability, via the activation of matrix metalloproteinase, facilitating tumor invasion and metastases. Moreover, ACEI use also results in accumulation of substance P, which is expressed in lung cancer tissue and is associated with tumor proliferation and angiogenesis.[3]

CONCLUSION :

- ✓ the use of ACEIs was associated with an elevated risk of lung cancer overall, along with evidence of a duration-response relation. Although the magnitudes of the observed estimates are modest, these small relative effects could translate into large absolute numbers of patients at risk for lung cancer, so these findings need to be replicated .

REFERENCES:

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