

## IMPACT OF CARDIOVASCULAR DRUGS ON THE DIAGNOSIS OF A MAINLY EXTRACARDIAC DISEASE, SARCOIDOSIS

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**Introduction:** Sarcoidosis is a granulomatous inflammatory disease, which mainly affects the lungs and extracardiac tissues. Determination of the usually elevated angiotensin-converting enzyme (ACE) activity is important in establishing the diagnosis and in assessing the success of treatment. However, ACE inhibitor drugs (ACEI) can significantly reduce ACE activity, influencing diagnostic and treatment decisions.

**Aim:** The aim of the study was to set up a measurement method that can detect the presence of any ACEI in the sample, and to investigate to what extent the requested ACE activity measurements were influenced by taken medication, and how this affected clinical decision making.

**Methods:** In this study, the results were analysed of patients who had diagnostic ACE activity measurements between 2014 and 2021 in Debrecen, Hungary. Serum ACE activity was measured in 4-, 35-, 400-fold dilutions using a fluorescent kinetic method.

**Results:** A total of 1853 diagnostic measurements were performed during the study period, of which 30 patients' results were not evaluated due to missing data. In 302 (17%) cases ACEI effect (>80%) could be observed, resulting a significant decrease in serum ACE activity compared to patients not taking ACEI (median [interquartile range], respectively: 4.42 [2.93-6.75] U/L; 11.32 [8.79-13.92] U/L;  $p < 0.01$ ). Eighty-three percent of patients with results below the reference range (RR) would fall at least within the normal range, while 43% of patients with results in the RR would have a value above RR if they were not taking ACEI. Thus, sarcoidosis in at least 61 patients may not have been detected in time or at all due to ACEI treatment during the study period. Physicians associated low ACE activity with ACEI treatment in only 3 cases.

**Conclusion:** With the adjusted method, the misleading presence of ACEI can be highlighted to the physician, helping to ensure proper interpretation of results and decision making. This can significantly reduce the time and cost, as well as increase the efficiency of establishing the diagnosis.

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