

Publication

Ambient temperature and atmospheric pressure at discharge as precipitating factors in immediate adverse events in patients treated for decompensated heart failure

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To investigate the relationship of ambient temperature and atmospheric pressure (AP) at patient discharge after an episode of acute heart failure (AHF) with very early post-discharge adverse outcomes. We analyzed 14,656 patients discharged after an AHF episode from 26 hospitals in 16 Spanish cities. The primary outcome was the 7-day post-discharge combined adverse event (emergency department -ED- revisit or hospitalization due to AHF, or all-cause death), and secondary outcomes were these three adverse events considered individually. Associations (adjusted for patient and demographic conditions, and length of stay -LOS- during the AHF index episode) of temperature and AP with the primary and secondary outcomes were investigated. We used restricted cubic splines to model the continuous non-linear association of temperature and AP with each endpoint. Some sensitivity analyses were performed. Patients were discharged after a median LOS of 5 days (IQR = 1-10). The highest temperature at discharge ranged from - 2 to 41.6 °C, and AP was from 892 to 1037 hPa. The 7-day post-discharge combined event occurred in 1242 patients (8.4%), with percentages of 7-day ED-revisit, hospitalization and death of 7.8%, 5.1% and 0.9%, respectively. We found no association between the maximal temperature and AP on the day of discharge and the primary or secondary outcomes. Similarly, there were no significant associations when the analyses were restricted to hospitalized patients (median LOS = 7 days, IQR = 4-11) during the index event, or when lag-1, lag-2 or the mean of the 3 post-discharge days (instead of point estimation) of ambient temperature and AP were considered. Temperature and AP on the day of patient discharge are not independently associated with the risk of very early adverse events during the vulnerable post-discharge period in patients discharged after an AHF episode.

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