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## Effect of Chlorthalidone on all-cause mortality in hypertension patients: systemic review and meta-analysis

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**Background:** Hypertension (HTN) is a widely prevalent chronic illness estimated to affect 1 billion people worldwide according to the world health organization (WHO). Adequate management and effective intervention for this condition is associated with decreased rates of both morbidity and mortality. Several HTN medications have been proposed to lower over-all mortality rates including calcium channel blockers and angiotensin receptor inhibitors. Other drugs such as Chlorthalidone are also being investigated to compare their efficacy to these medications. However, which drug is superior remains a topic of discussion. This paper aims to compare the overall mortality rates between these interventions.

**Methods:** We conducted a systematic review and meta-analysis of studies comparing Chlorthalidone, Amlodipine, and Lisinopril hypertensive adults ( $\geq 18$  years). Studies from 2010 onwards were screened from PubMed, Web of Science, and Scopus. Keywords used were "Chlorthalidone," "Amlodipine," "Lisinopril," "Hypertension", and "All-cause mortality". A total of 9 studies were retrieved. Screening and data extraction were done independently by two authors, and conflicts were resolved by a third party.

**Results:** Nine papers reported the utilization of Chlorthalidone with a mortality probability rate of 27%, 95% CI 0.19-0.37,  $p = 0$ . Amlodipine was reported in 7 included manuscripts with a total patient number of 33,492 and an all-cause mortality rate of 32%, 95% CI 0.24-0.41,  $p < 0.01$ . Lisinopril similarly was studied in 7 included manuscripts with a total participants number of 33,663. All-cause mortality probability rate for Lisinopril was 32%, 95% CI 0.24-0.41,  $p < 0.01$ . Conjoint analysis for all three interventions in the papers included showcased an all-cause mortality probability rate of 30%, 95% CI 0.12-0.58,  $p = 0$ .

**Conclusion:** Chlorthalidone was associated with better all-cause mortality risk in comparison to amlodipine and lisinopril. The latter two drugs had similar rates.

### Biography

Abdallah Bakeer has completed his M.D at the age of 24 years from Jordan University of Science and Technology. He is currently doing his internship year at Royal Hospital in Amman, Jordan. He has one publication with several submitted papers under review.