Does a low-salt diet reduce morbidity and mortality in congestive heart failure?

EVIDENCE-BASED ANSWER No randomized controlled trials (RCTs) have addressed the independent role of sodium restriction in the morbidity or mortality of congestive heart failure. However, current guidelines recommend sodium restriction for secondary prevention of congestive heart failure exacerbation. (Grade of recommendation: D.) Clinical trials of multifactorial, nondrug interventions have shown an association of sodium restriction with reduced morbidity and improved quality of life in some populations with congestive heart failure. (Grade of recommendation: C.)

EVIDENCE SUMMARY Sodium restriction is a mainstay of nonpharmacologic therapy for congestive heart failure, although no evidence proves that sodium restriction alone reduces morbidity and mortality. Sodium restriction reduces hypertension\(^3\) and left ventricular hypertrophy,\(^7\) both risk factors for congestive heart failure.

Studies of multifactorial interventions correlate reduced congestive heart failure morbidity with sodium restriction or dietary counseling. These results cannot be generalized to sodium restriction independent of the other nondrug interventions. A small RCT compared a program of exercise, cognitive therapy/stress management, salt restriction, and weight reduction to treating congestive heart failure with digoxin or placebo.\(^5\) The nondrug interventions improved functional capacity, body weight, and mood but not ejection fraction in patients with congestive heart failure.\(^1\) A systematic review of 6 RCTs showed that multidisciplinary heart failure disease management programs, which emphasized dietary counseling and/or sodium intake reduction, improved functional capacity, patient satisfaction, and quality of life.\(^6\)

A large RCT that investigated how sodium reduction affects hypertension and frequency of cardiovascular events (including congestive heart failure) in the elderly did not show a significant difference in primary prevention of cardiovascular events between the sodium-restricted group and controls.\(^3,7\) Two prospective cohort studies linked high sodium intake to cardiovascular mortality and all-cause mortality in overweight persons independent of other cardiovascular risk factors.\(^8,9\)

RECOMMENDATIONS FROM OTHERS Physiological principles, observational studies, common practice, and expert opinion support sodium restriction for reducing edema and the need for diuretic agents in patients with congestive heart failure.\(^1\) No clinical trial evidence favors a 2-g over a 3- to 4-g sodium restriction. See Table for common recommendations.

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REFERENCES

TABLE

<table>
<thead>
<tr>
<th>Patient populations with congestive heart failure</th>
<th>Sodium restriction</th>
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<tr>
<td>Older adult(^1)</td>
<td>1.6 g Na</td>
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<tr>
<td>With fluid retention or hypertension(^1)</td>
<td>Moderate sodium reduction</td>
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<tr>
<td>At risk for or with asymptomatic heart failure(^7)</td>
<td>Prudent dietary salt reduction</td>
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<td>Older adult nursing home residents(^12)</td>
<td>Low salt</td>
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<tr>
<td>Taking diuretics(^8,9)</td>
<td>2 g Na</td>
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