

Effect of Salt Substitution on Cardiovascular Events and Death

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CLINICAL PROBLEM

Salt substitutes that replace part of the sodium in regular salt with potassium chloride have been shown to decrease blood pressure, but their effects on cardiovascular and safety outcomes are unclear.

CLINICAL TRIAL

Design: An unblinded, cluster-randomized trial examined cardiovascular and safety outcomes with a salt substitute as compared with regular salt in high-risk adults.

Intervention: 600 villages in rural China were assigned to use a salt substitute (75% sodium chloride, 25% potassium chloride) for all household cooking and food preservation or to continue using regular salt (100% sodium chloride). A total of 20,995 adults with a history of stroke or age ≥ 60 years with poorly controlled blood pressure were included. The primary outcome was stroke.

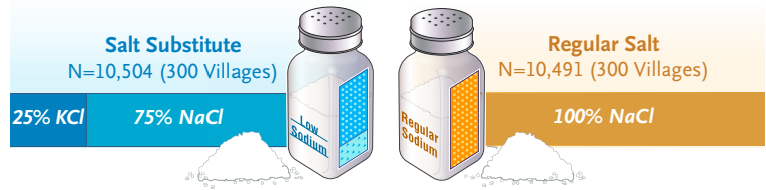
RESULTS

Efficacy: During a mean follow-up of 4.74 years, the incidence of stroke was significantly lower in the salt-substitute group than in the regular salt group. Secondary outcomes, including major cardiovascular events and death from any cause, also favored the salt substitute.

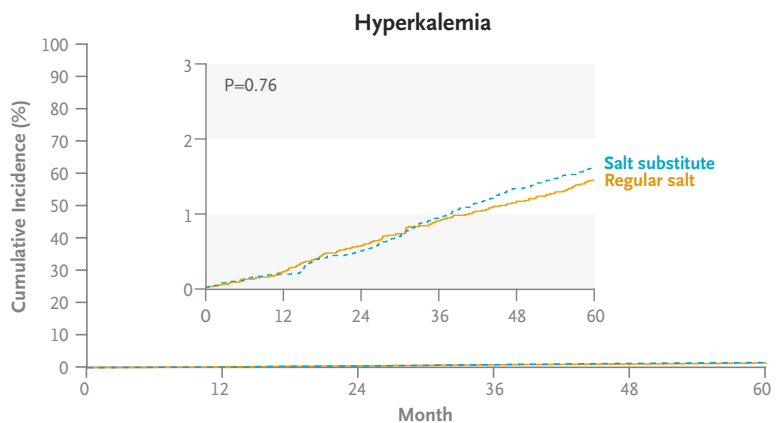
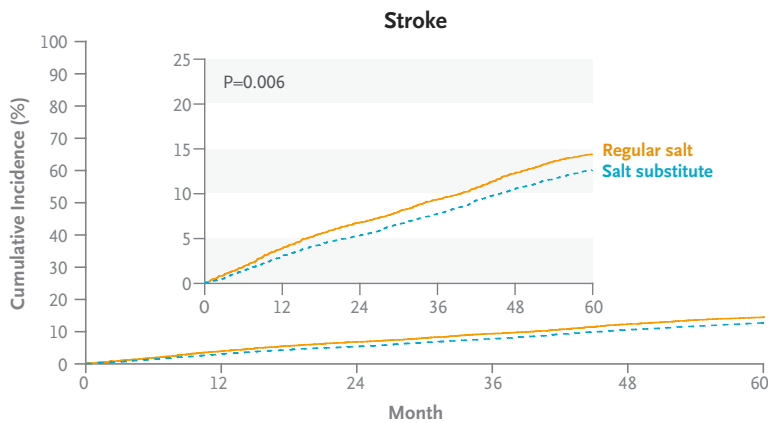
Safety: The incidence of clinical hyperkalemia did not differ between the groups.

LIMITATIONS AND REMAINING QUESTIONS

- Participants were aware of the trial-group assignments.
- Whether the findings can be generalized to other settings or populations is unknown.
- Serum electrolytes were not measured serially, so some instances of hyperkalemia were likely to have been missed.



Outcomes	Salt Substitute	Regular Salt	Rate Ratio (95% CI)	P Value
	no. of events per 1000 person-yr			
Stroke	29.14	33.65	0.86 (0.77–0.96)	P=0.006
Major Adverse CV Events	49.09	56.29	0.87 (0.80–0.94)	P<0.001
Death from Any Cause	39.28	44.61	0.88 (0.82–0.95)	P<0.001
Hyperkalemia	3.35	3.30	1.04 (0.80–1.37)	P=0.76



CONCLUSIONS

In this study among patients with a mean age of 65.4 years and a history of stroke or high blood pressure, use of a salt substitute lowered the risks for stroke, major cardiovascular events, and death from any cause.