primary studies - published RCT

Garlic as an inhibitor of Pseudomonas aeruginosa quorum sensing in cystic fibrosis--a pilot randomized controlled trial.

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Study design (if review, criteria of inclusion for studies)

Study based in Nottingham, UK. Pilot double-blinded, randomised controlled trial of garlic as a quorum sensing inhibitor.

Participants

34 participants over 8 years of age with CF (definition given) and chronic pulmonary infection with P. aeruginosa and at the time of randomisation.

Interventions

8 weeks treatment with garlic capsule once daily versus placebo.

Outcome measures

Primary outcome: FEV1. Secondary outcomes: weight, clinical score, quorum sensing signal molecule level.

Main results

Eight patients withdrew, leaving 26 for analysis (13 garlic). With placebo, there was a greater decline in mean (SD) percentage change from baseline FEV(1) [-3.6% (11.3)] than with garlic [-2.0% (12.3)]. This was not significant (mean difference = 1.6, 95% CI -12.7 to 15.9, P = 0.8). The mean (SD) increase in weight was greater with garlic [1.0% (2.0)] than with placebo [0.6% (2.0)]--non-significant (mean difference = 0.4%, 95% CI -1.3 to 2.0, P = 0.6). The median (range) change in clinical score with garlic was -1 (-3 to 5) and 1 (-1 to 4) with placebo (negative score means improvement). This was non-significant [median difference = -1 (-3 to 0), P = 0.16]. In the garlic group, seven patients had IV antibiotics versus five placebo. There was a highly significant correlation between plasma and sputum measurements of the QS molecule 3-oxo-C12-HSL (Pearson correlation coefficient = 0.914, P = 0.004). At the end of treatment five patients in each group had abnormal liver function or triglycerides and five garlic patients (one placebo) reported minor adverse effects.Garlic capsules were well tolerated.

Authors' conclusions

Although there was no significant effect of garlic compared to placebo in this pilot study, there was a suggestion of improvement with garlic which should be investigated in a larger trial.

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See also

Pediatr Pulmonol. 2010 Apr;45(4):356-62.

Keywords

Adolescent; Adult; Bacterial Infections; Child; Food; Garlic; Infection; non pharmacological intervention - complement med; non pharmacological intervention - diet; Phytotherapy; oils; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Supplementation; Capsules; essential fatty acids; Complementary medicine;