

Synbiotics, probiotics or prebiotics in infant formula for full term infants: a systematic review.

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Abstract

Background: Synbiotics, probiotics or prebiotics are being added to infant formula to promote growth and development in infants. Previous reviews (2007 to 2011) on term infants given probiotics or prebiotics focused on prevention of allergic disease and food hypersensitivity. This review focused on growth and clinical outcomes in term infants fed only infant formula containing synbiotics, probiotics or prebiotics. METHODS: Cochrane methodology was followed using randomized controlled trials (RCTs) which compared term infant formula containing probiotics, prebiotics or synbiotics to conventional infant formula with / without placebo among healthy full term infants. The mean difference (MD) and corresponding 95% confidence intervals (CI) were reported for continuous outcomes, risk ratio (RR) and corresponding 95% CI for dichotomous outcomes. Where appropriate, meta-analysis was performed; heterogeneity was explored using subgroup and sensitivity analyses. If studies were too diverse a narrative synthesis was provided. RESULTS: Three synbiotic studies (N = 475), 10 probiotics studies (N = 933) and 12 prebiotics studies (N = 1563) were included. Synbiotics failed to significantly increase growth in boys and girls. Use of synbiotics increased stool frequency, had no impact on stool consistency, colic, spitting up / regurgitation, crying, restlessness or vomiting. Probiotics in formula also failed to have any significant effect on growth, stool frequency or consistency. Probiotics did not lower the incidence of diarrhoea, colic, spitting up / regurgitation, crying, restlessness or vomiting. Prebiotics in formula did increase weight gain but had no impact on length or head circumference gain. Prebiotics increased stool frequency but had no impact on stool consistency, the incidence of colic, spitting up / regurgitation, crying, restlessness or vomiting. There was no impact of prebiotics on the volume of formula tolerated, infections and gastrointestinal microflora. The quality of evidence was compromised by imprecision, inconsistency of results, use of different study preparations and publication bias. AUTHORS' CONCLUSIONS: There is not enough evidence to state that supplementation of term infant formula with synbiotics, probiotics or prebiotics does result in improved growth or clinical outcomes in term infants. There is no data available to establish if synbiotics are superior to probiotics or prebiotics.