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Probiotic BlisK12 lowers group A Streptococcal (GAS) pharyngeal prevalence in a high Acute Rheumatic Fever area by lowering school transmission: A stepped wedge cohort study

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Aim: This school study compares the effect on the pharyngeal GAS prevalence of 30 days BlisK12 probiotic for all consenting pupils, after 10 days antibiotic treatment of GAS positive pupils, compared with antibiotics alone.

Background: Acute Rheumatic fever (ARF) is prevalent for indigenous Bay of Plenty, New Zealand, Maori and Pacific children and young adults with an incidence similar to that seen for NZ Europeans in the 1930s. Group A streptococcal infection (mainly pharyngeal in New Zealand) precedes ARF. School programmes treating students GAS sore throats with antibiotics halved ARF. We evaluated BlisK12 probiotic containing Streptococcus salivarius, (producing two anti-streptococcal lantobiotics) impact on GAS prevalence.

Method: Consenting pupils with GAS positive throat swabs in two school cohorts 1 and 2 without school ARF programmes were treated with 10 days antibiotics. All pupils in Cohort 1 were then offered BlisK12 Probiotic for 30 days. Cohort 2 school pupils only had antibiotics for GAS positive throat swabs. The outcomes were compared in both cohorts with throat swabs a month later. Those initially negative who became positive were noted and those initially positive also followed, separating probiotic effects preventing the carriage from clearance.

Results: BlisK12 is associated with a greater decline in GAS prevalence than antibiotics alone. BlisK12 prevented carriage rather than increased antibiotic efficacy prolonging GAS clearance; Antibiotics unexpectedly were more effective without BlisK12.

Conclusion: BlisK12 Probiotic is effective at preventing GAS pharyngeal carriage; BlisK12 probiotic for GAS negative students might augment school ARF prevention, evaluated with two winter terms' school sweeps assessing GAS pharyngealprevalen.

Biography

John Malcolm FRACP Consultant Paediatrician, Whakatane, Bay of Plenty District Health Board, New Zealand, Honorary Clinical Senior Lecturer Paediatrics, Universities of Auckland and Otago, Community Paediatrics interests include Acute Rheumatic Fever epidemiology Rheumatic Heart Disease followup and ARF prevention programmes. He undertook the present study with indigenous Maori health provider Ngati Awa and Eastern Bay Primary Health Alliance to establish if and how BlisK12 probiotic decreases pharyngeal GAS carriage and sore throats, to increase the efficacy of school programmes particularly for the one third of children getting ARF, who do not recollect a preceeding GAS sore throat.

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