The associated penicillin and streptomycin resistance found in many of the Achromycin-resistant strains may be taken to indicate that these were probably strains picked up from the environment rather than mutants selected by the antibiotic from normally parasitic strains. That selection should operate mainly on strains resistant to other antibiotics is obviously of considerable importance in relation to the general problem of bacterial resistance. This selection must be taken as being due to the fact that strains of *Staph. pyogenes* resistant to the tetracyclines also tend to be resistant to penicillin and/or streptomycin, presumably because the tetracyclines have acted on a bacterial population with considerable prior experience of penicillin and streptomycin; that is, on the population to be found in a hospital environment.

The probable importance of faecal carriers as a source of staphylococcal cross infection has been stressed by Brodie and by Matthias *et al.* (1957).[2] The combination of the high isolation rate with selection for resistance which we have observed in the treated cases in fact raises the possibility that the faeces of patients under treatment with antibiotics may well be a more important source of cross infection by resistant staphylococci than the nasal secretions.

Summary.

The presence of *Staph. pyogenes* in the nasal and intestinal flora of children under prolonged Achromycin treatment has been investigated. The administration of Achromycin in a dosage of 250 mgm. daily has been found to select strongly for resistant strains; most of the Achromycin-resistant organisms selected were in addition resistant to penicillin or to penicillin and streptomycin. Achromycin treatment also appeared to increase the overall parasitism of the intestinal tract by *Staph. pyogenes*: no increase in nasal parasitism by *Staph. pyogenes* was observed.

In general our results indicate the importance of the respiratory and intestinal tracts, and particularly the latter, as foci from which, in patients under antibiotic treatment, antibiotic-resistant strains of *Staph. pyogenes* may be disseminated.

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