A study undertaken by members of the Milnerton branch of The South African Academy of Family Practice/Primary Care to evaluate the efficacy and tolerability of Augmentin demonstrated that Augmentin was bacteriologically statistically superior to amoxycillin in treating urinary tract infections, skin and soft tissue infections and all infections caused by amoxycillin resistant organisms.

In a discussion of the trial, Dr J H Levenstein of Pinelands, Cape Town, notes that the trial has a special significance for general practitioners in that it shows a high incidence of penicillin-resistant organisms (51 per cent). "This observation, as yet limited to one area in South Africa, has wide implications for the general practitioners' management of infections".

According to Dr Levenstein different strategies have been utilised to meet the problem of penicillin-resistant organisms, including the development of further semisynthetic penicillins and cephalosporins. "The addition of clavulanic acid to a known broad spectrum semi-synthetic penicillin amoxycillin (Augmentin) represents a novel approach to meet the problem".

An article by researchers Reading and Cole which was published in Antimicrobial Agents Chemotherapy (1977: 11,852-857), which refers to clavulanic acid as an irreversible inhibitor of many of the B-lactamase enzymes produced by strains of the penicillin/ampicillin/amoxycillin resistant organisms, is cited by Dr Levenstein. "With the clavulanic acid binding the penicillin destructive enzymes, the amoxycillin is free to exhibit its antibacterial activity," says Dr Levenstein.

Ten general practitioners of the Milnerton Group of the South African Academy of Family Practice/Primary Care participated in this study. The 164 patients who participated in the trial, were treated with either Augmentin 375 mg tablets or amoxycillin 250 mg capsules, three times daily, for seven days at the start of a meal. Ten patients whose treatment with amoxycillinfailed, were retreated with Augmentin.

In the initial stages of the trial 102 patients were randomly located to either Augmentin or amoxycillin treatment. Eighty-nine of the patients were clinically assessable. Bacteriologically 63 were assessable. Of these 32 received amoxycillin and 31 Augmentin treatment. Subsequently a further 62 patients received Augmentin treatment. Of these 50 were clinically assessable and 40 were bacteriologically assessable.

Bacteriological assessment was thus done in 71 patients treated with Augmentin and 32 treated with amoxycillin, as well as a further six patients who after having failed amoxycillin treatment, received Augmentin.

Evaluating the overall results, Dr Levenstein states: "Overall, the clinical success rate following Augmentin in 68 skin and soft tissue infections was 64 (94.1 per cent). Seven of these had previously received amoxycillin. Bacteriological success was obtained in 35 of the 47 patients (74.5 per cent), four of which had previously received amoxycillin."

Referring to the 39 patients with urinary tract infections who were treated with Augmentin in the trial, including two patients who had had a previous unsuccessful amoxycillin therapy, Dr Levenstein states that the clinical success rate in this case was 97.4 per cent (38 patients).

"Of the 30 patients of which two had previously received amoxycillin who were bacteriologically assessable, success was achieved in 23 (76.7 per cent). Twenty-seven of the patients with skin and soft tissue infections were treated with amoxycillin and clinical success was achieved in 21 (77.8 per cent)"

The success rate in the 21 patients who were bacteriologically assessable while treated with amoxycillin was 57.1 per cent. Clinical success was achieved in 71.4 per cent of the patients with urinary tract infections treated with amoxycillin.

"Eleven patients were bacteriologically assessable and amoxycillin was successful in four (36.5 per cent)," according to the Study Group.

An evaluation of the overall bacteriological success of Augmentin and amoxycillin in treating ampicillin/amoxycillin sensitive and resistant organisms show that both drugs are equally successful at treating amoxycillin organisms (82.7 per cent in the case of Augmentin and 71.4 per cent of amoxycillin). Amoxycillin is however statistically far less successful than Augmentin in the treatment of amoxycillin resistant organisms (17.8 per cent success in the case of Augmentin, 33.3 per cent success for amoxycillin).

Bacteriological findings in this study demonstrated that Staphylococcus aureus was the commonest pathogen implicated in skin and soft tissue infection, occurring in 49 cases of which 36 (73.5 per cent) were Augmentin/amoxycillin resistant. The commonest pathogen implicated in urinary tract infections were coliform organisms.

Dr Levenstein states in conclusion: "Augmentin performed satisfactorily in the General Practice situation. Amoxycillin appeared successful too in the clinical assessment where amoxycillin sensitive organisms were cultured. However, Augmentin was statistically superior to amoxycillin both clinically and bacteriologically where amoxycillin resistant organisms were cultured.

"While bacterial pathogens in Primary Care may still differ to those in the hospital it is evident from our and other data that the problem of penicillin resistant staphylococci and escherichiae coli is no longer confined to the hospital environment, but is widespread in General Practice."