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COMMENTS ON THE SUCCESSFUL TREATMENT OF *BLASTOCYSTIS SPP*.WITH PAROMOMYCIN IN KENYA.
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SCIENTIFIC COMMUNICATION

COMMENTS ON THE SUCCESSFUL TREATMENT OF *BLASTOCYSTIS SPP.* WITH PAROMOMYCIN IN KENYA.

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We wish to comment on our experience with treatment of *Blastocystis spp*.,which is an intestinal organism frequently identified in human stool specimens. As noted by Tan (1) in a comprehensive review covering all aspects of *Blastocystis*, it was originally classified as a yeast before being called a protozoan; currently it is placed in the Stramenophile group which is neither protozoan nor fungal. At least nine sub-types of *Blastocystis* have been identified, several of which are zoonotic; it is therefore recommended by Tan (1) that it should be called *Blastocystis spp*. rather than *Blastocystis hominis* in laboratory reports. *Blastocystis* is cosmopolitan in distribution though it is more prevalent in tropical countries and in environments with poor sanitation. Transmission is likely to be faecal-oral and its life cycle is believed to be similar to that of amoebae. It has several stages, from smooth and granular vacuolar forms to amoeboid and cyst forms, which range in size, shape and arrangement of chromatin material (1). From our observations it is often misdiagnosed in stool reports as amoebic cysts, or ignored altogether.

The prevalence of *Blastocystis* in rural Kenyan communities, where it is frequently found alongside other intestinal parasites, ranges from 17% to 36% (2, 3) but can be higher among targeted groups of children: we obtained rates of 61% (35/57) in a rural childrens' home in 2015 and 53.7% (51/95) in an urban primary school in 2008; it is consistently the commonest parasite identified in stool specimens in our laboratory at the Centre for Tropical and Travel Medicine (CTTM) in Nairobi, Kenya, with monthly frequencies averaging about 35% (Unpublished data, CTTM).

As reviewed by Tan (1), the role of *Blastocystis* as an intestinal pathogen remains controversial, with several studies being inconclusive and others finding a significant association with Irritable Bowel Syndrome (IBS) and a range of other symptoms such as diarrhoea, flatulence and bloating. In Europe and the USA metronidazole and trimethoprim-sulfamethoxazole remain the drugs of choice to treat symptomatic blastocystosis.

In Kenya, paromomycin (aminosidine sulphate) has been marketed as an effective anti-amoebic drug ever since successful trials were conducted countrywide in the 1980's (4). It is an aminoglycoside drug manufactured in both tablet and syrup formulations. It has been the drug of choice for all symptomatic cases of intestinal amoebiasis and other protozoa for over 20 years in our outpatient clinic at CTTM, during which time it became apparent that it was also effective in eliminating *Blastocystis*, either alone or occurring with other protozoa. The treatment regimen for intestinal protozoa and blastocystosis is paromomycin at a dose of 500mg BD for 5 days for adults above 50kg (4).

These observations are consistent with our findings from a study in 2008, in which we initiated a comparative treatment trial of anti-protozoal drugs, including paromomycin, among a group of 95 schoolchildren aged 3 to 12 years in a relatively low socio-economic environment within Nairobi. The study did not end conclusively due to poor follow-up and the results were therefore not published. However, we were able to extract specific records for 51 children aged 6 to 12 years infected with *Blastocystis*, either in mixed infections or alone, of whom 24 received treatment with paromomycin at a dose of 125mg or 250mg BD below and above 25kg respectively for 5 days. All stools before and after treatment were examined microscopically

in our laboratory using direct saline smears and formol ether concentration. Post-treatment stools were examined within 24 to 48 hours after completion of treatment. *Blastocystis* was eradicated from 22 of the 24 stools, a parasitological cure rate of 91.7%. The high cure rate from this study, together with our long-term observations, leads us to concur with the findings of van Hellemond *et al* (5) that paromomycin should be considered as the drug of choice for the treatment of human infection with *Blastocystis*. We recommend further controlled trials with paromomycin in symptomatic adults and children infected only with *Blastocystis.*

CONFLICT OF INTEREST

None

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