Introduction: Worldwide, approximately 405,000 cases of oral cancer (OSCC) are diagnosed each year, with a 5-year survival rate of around 50%. Although patients with advanced disease show reduced survival, there is no single pathologic or molecular feature that identifies aggressive, early-stage tumours.

Objective: To determine whether ethnic differences exist in circulating markers of angiogenesis between South Asians, Blacks and Whites. To determine associations between these markers, cardiovascular risk factors and Peripheral arterial disease (PAD).

Patients and Methods: We recruited 255 subjects (86 South Asians, 81 Blacks and 79 Whites) between October 2008 and September 2009 attending Sandwell & West Birmingham Hospitals NHS Trust. Subjects were separated into radioologically confirmed symptomatic PAD, risk factor controls (At least 1 cardiovascular risk factor & Ankle Brachial Pressure Index (ABPI)<1) and healthy volunteers (No cardiovascular risk factors & ABPI>1). All subjects completed a questionnaire, anthropometric measurements and phlebotomy was undertaken. Enzyme linked immunoassay (ELISA) was used to quantify angiogenic markers.

Results: Whites had lower angiogenin concentration than both South Asians and Blacks (p<0.0217 and p<0.003 respectively). Angiogenin was higher in diabetics than non-diabetics (p=0.0338). Ang-1 and Ang-2 were correlated with Age (p=0.007 and p=0.006 respectively). Ang-2 was higher in coronary artery disease (p=0.0176) and PAD (p=0.0018). The association between Ang-2 and PAD was apparent in both South Asians (p=0.0084) and Whites (p=0.0484).

Conclusions: Ethnic differences in angiogenic markers are evident. This may reflect susceptibility of particular groups to PAD. Of the angiogenic markers, Ang-2 was higher in symptomatic PAD; its levels increasing with advancing disease.