ADHERENCE TO SECONDARY PREVENTION AND LIFESTYLE HABITS IN PATIENTS WITH VASCULAR DISEASE: AN OBSERVATIONAL STUDY

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BACKGROUND
There is a well-established link between vascular disease and an increased risk of cardiovascular events (CVD).1,2 It follows that secondary prevention of cardiovascular risk factors is a fundamental tenet of the management of patients with vascular disease. Treatments centre around the control of modifiable risk factors such as hypertension, the prevention or control of diabetes, lipid-lowering and antplatelet therapies, in addition to health behaviours such as diet, exercise and smoking cessation.3 Yet despite this, the rate of effective secondary prevention amongst vascular patients remains poor.4 Just two thirds of patients are on best secondary medical prevention as per NICE guidelines.5-7 These suboptimal treatment levels are compounded by a lack of compliance in the wider population.3 Similar patterns of nonadherence are observed with lifestyle habits.3

Alongside poor adherence to medications and lifestyle changes, there persists a socioeconomic inequity in the care delivered to patients with CVD risk factors, with an inverse association between socioeconomic status and CVD being demonstrated.8-12 Despite the well documented evidence of the increased risk of mortality from CVD in all patient groups, new evidence suggests that patients with documented nonadherence to medication may fare worse than patients whose adherence is assessed as adequate.13,14

OBJECTIVES
- To quantify the rate of appropriate pharmacological secondary prevention treatment in vascular patients
- To quantify adherence to secondary prevention strategies (medication, physical activity, diet) in patients with vascular disease
- To understand the sociodemographic predictors of adherence to secondary prevention in vascular disease

METHODOLOGY
PARTICIPANTS: 113 adult patients (FIGURE 1) attending vascular outpatient clinics across two hospitals in the Imperial College Healthcare NHS Trust over a 10 week period.

QUESTIONNAIRE: The questionnaire was based on six domains:
- clinical and demographical data (age, gender, type of vascular disease, number of comorbidities, body mass index and smoking habits);
- education, income and social deprivation (by Index of Multiple Deprivation decile);
- medication adherence assessed by the validated MMAS-813,14,15
- physical activity measured by the GPAQ16
- dietary habits measured by the UKDDQ17
- free text section

Data from validated questionnaires were analysed according to existing guidelines.

STATISTICAL ANALYSIS: all analyses were conducted using SPSS v24.0 (IBM; USA). Shapiro-Wilk testing confirmed that all data was not normally distributed. Mann-Whitney U, Spearman’s rank, Kruskal-Wallis and Chi² testing were used to analyse the data.

RESULTS
- The rate of appropriate pharmacological secondary prevention in those with arterial disease was 64.3%, rising to 78.6% when including those prescribed antihypertensives other than those included in the NICE guidelines.13
- The overall rate of adherence to long-term medications was 45.8%, with only smoking shown to have a significant effect (p<0.05) on adherence, and with non-smokers having worse adherence compared with their smoking counterparts.
- The rate of adherence to healthy diet was 20.4%, adherence was not significantly influenced by any sociodemographic factors.
- The overall rate of adherence to sufficient physical activity was 36.3%, increasing age was shown to have a weak but significant correlation with decreasing activity.

FIGURE 2
Results for nine sociodemographic factors against adherence to medications, healthy diet and to physical activity, as defined by validated questionnaires.

* denotes significant results (p<0.05)

DISCUSSION
Reassuringly, the rate of appropriate pharmacological intervention amongst patients with vascular disease is in line with NICE guidance13 but adherence to secondary prevention strategies is low. Based on the presented data, this study found minimal evidence of socioeconomic inequity affecting treatment adherence in vascular patients. This is in line with other studies of adherence in chronic illness globally.3

These findings suggest that adherence in vascular patients is complex and is likely to be multifactorial and rather than being attributed to one single factor, adherence and nonadherence may result from a complex interplay of factors unique to each patient. Findings must be considered in light of the study limitations including the sample size and single centre design. However findings are suggestive of the need for a tailored, patient-centred approach to increasing adherence.

FUTURE RESEARCH
Plans to expand this study into a multi-centre design will allow for determination of the generalisability of the findings of this study across all vascular patients. Face to face interviewing may provide a more holistic view of adherence behaviours in vascular patients.

Implications of such future studies may allow for the development of new sociodemographically targeted interventions to improve treatment adherence and thus improve clinical outcomes.

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