Is there a correlation between blood type and platelet aggregations in the peripheral blood?

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Although not used in conventional diagnostic procedures, blood typing may be used by naturopaths for a variety of purposes (1, 2) and there is also a belief that the presence or absence of platelet aggregates in blood films can be correlated with ABO blood group. Further, as platelets have a role in cardiovascular disease, (3, 4) that ABO blood group is thought to predict those at increased risk of cardiovascular disease. While this association has not been substantiated in the scientific literature several authors have noted correlations between cardiovascular variables, including platelet function, and ABO blood type. (5-8) In this pilot study platelet aggregate data, taken as part of a routine naturopathic evaluation, was retrieved from the files of 690 adults (478 females and 212 males) attending the private naturopathic clinic of one of the authors (RA). Ethics approval for the study was granted by the Charles Sturt University Ethics in Human Research Committee. Platelet aggregates were measured and classified as described by Wu and Hoak. (9) and Hoekstra et al. (2) with samples were said to be indicative of increased risk of cardiovascular disease where the blood film contained one or more platelet aggregates measuring greater than 4 cm in diameter. ABO blood type, as determined using standard antigen-antibody agglutination, along with age and gender was also recorded.

The average age for the females in this study was 44 ± 14 years (mean ± standard deviation, range 18-85 years), and the average age for males was 48 ± 14 years (range of 19-95 years). The majority of the patients were either blood group O (44.5%) or A (42.3%) with group B accounting for 9.7% of the sample and group AB 3.5%. There were significantly more males with group AB than females (6.1% v 2.3%, p=0.0217). Most patients (48%) were considered, according to naturopathic diagnosis principles, to have increased risk of cardiovascular disease based on the presence of large platelet aggregations, 28% had the presence of aggregates but were below the threshold for increased risk of cardiovascular disease and 24% were negative for platelet aggregates. We did not find any statistically signification difference between these groups based on sex (p=0.889), age (p=0.990) or ABO blood groups (p=0.317). The number of platelet aggregates present, irrespective of size, was also analysed with no statistically significant association with age (p=0.869), sex (p=0.159) or ABO blood type (p=0.886) observed. All smokers (n=7) were classed as having increased risk of cardiovascular disease, however there was no correlation between cardiovascular risk.
category and medications expected to affect platelet aggregation (eg aspirin, warfarin) 
(p=0.220).

The association between ABO blood group and various health parameters is promoted by 
D’Adamo, a naturopathic physician, and has been popularised in a range of ‘Eat Right 4 Your 
Type’ books (see http://dadamo.com). Based on the work of D’Adamo some naturopathic 
practitioners use ABO blood grouping and the presence of platelet aggregates when assessing 
the health status of their patients and it is believed to provide an indication of risk of 
cardiovascular disease. Despite many patients in this study being positive for platelet 
aggregates and, based on aggregate size, being deemed to be at increased risk of 
cardiovascular disease we have shown that there is no statistically significant correlation 
between blood type and size of platelet aggregation, nor was there any association with age or 
sex. As this study uses retrospective data there were some limitations with respect to the type 
of information included in patient files and the influence of these factors (eg family history of 
cardiovascular disease, smoking, high levels of stress) on platelet aggregation in this 
population is unknown. According to the method used in this study, all smokers were 
classified as having increased risk of cardiovascular disease; however the number of smokers 
was small and the validity of this finding is uncertain. This suggests that there is no scientific 
basis to the naturopathic diagnostic practice of lining blood type with cardiovascular risk.

REFERENCES
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