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Non-O Blood Groups Have Higher Risk of Heart Attack

New research presented at Heart Failure 2017 and the 4th World Congress on Acute Heart Failure shows that non-O blood group is associated with a higher risk of heart attack.

Lead author Tessa Kole, a Master's degree student at the University Medical Centre Groningen, the Netherlands explains that people with non-O blood groups (A,B, AB) are at a higher risk for heart attacks and cardiovascular mortality. However, this finding still lacks evidence and needs to be confirmed further to determine if it has any implication on personalised medicine.

The study was conducted with 1,363,569 subjects from 11 prospective cohorts. A total of 23,154 cardiovascular events took place. An analysis of coronary events included 777,113 people with non-O blood group and 519,743 people with an O blood group. Of these 11,437 in the non-O blood group and 7,220 in the O blood group suffered a coronary event. The odds ratio for coronary events was much higher in carriers of non-O blood groups.

With respect to combined cardiovascular events, 17,440 patients from 708,276 of the non-O blood group and 10,916 of 476,868 of the O blood group had an event. The odds ratio for combined cardiovascular events was higher in non-O blood group carriers.

No significant difference was observed between the O and non-O blood groups as far as fatal coronary events are concerned.

"We demonstrate that having a non-O blood group is associated with a 9% increased risk of coronary events and a 9% increased risk of cardiovascular events, especially myocardial infarction," said Ms Kole.

One possible explanation for the higher risk for cardiovascular events in non-O blood group carriers may be greater concentrations of von Willebrand factor. Non-O blood group carriers, especially those that have an A blood group, are also known to suffer from higher cholesterol levels. Those with non-O blood group have higher levels of galectic-3 which is linked to inflammation and poor outcomes in heart failure patients.

However, the researchers believe that further evidence needs to be gathered to identify the cause of increased cardiovascular risk in people with non-O blood group. This might be possible by collecting more information about risk in each non-O blood group (A, B and AB). Blood group should be included in risk assessment for cardiovascular prevention along with sex, age, cholesterol levels and systolic blood pressure. It may be possible that people with an A blood group have a lower treatment threshold for dyslipidaemia or hypertension. Further studies are needed to validate this.

David Thorburn
Contributing Editor

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