

Influence of ABO Blood Group on VWF tests in Healthy Saudi Blood Donors

Abstract.

Von Willebrand disease is a common bleeding disorder. The wide variation in von Willebrand factor (VWF) levels between and within normal individuals highlights the clinical challenge of defining its cutoff value. Although studies on the influence of ethnicity on ABO phenotypes and the levels of VWF have been carried out on different ethnicities, there is a lack of such data among Arab population. We aimed to evaluate the correlation of ABO phenotypes with all the parameters of the minimal test panel of VWF including VWF antigen, VWF activity using the ristocetin cofactor and the collagen binding activity assays, and factor VIII coagulant activity (VWF:Ag, VWF:RCo, VWF:CB and FVIII:C) tested in a normal Arab population, and to estimate ABO-specific normal reference range. Blood samples were collected from 87 healthy donors in Riyadh to determine levels of factor VIII and VWF panel between the various ABO phenotypes. The highest mean values of factor VIII:C (128U/dl), VWF:Ag (125U/dl), VWF:RCo (109U/dl) and VWF:CB (91U/dl) were observed with type AB and the lowest mean values of factor VIII:C (81U/dl), VWF:Ag (85U/dl), VWF:RCo (73U/dl) and VWF:CB (70U/dl) corresponded to type O. ABO phenotypes significantly influence plasma levels of VWF parameters in Arab nations as seen with other ethnicity. Hence, ABO-specific normal ranges of the minimal test panel of VWF and factor VIII:C are essential for the appropriate prediction of mild von Willebrand disease. Further study including a larger categorized sample size is required to generalize the test panel on the Arab population.

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