values between the two groups did not show any significant differences. The rate constant of drug elimination from the central compartment, K_{10}, which shows an inverse proportion to Vc and is directly proportional to CL. In the HHD group the Vc increased and CL decreased, thus K_{10} decreased accordingly.

Propofol is predominantly cleared by the liver and most of the metabolic products of propofol metabolism are excreted by the kidneys in the form of glucuronide and sulfide conjugates. The blood perfusion to the liver, the rate for the drug uptake and the activity of the microsomal enzyme system are the main factors that determine the metabolism of propofol. Hypervolemic hemodilution leads to changes in blood volume, increases in hepatic blood flow and a consequent increase in CL. Conversely, propofol decreases cardiac output and hepatic blood flow. Some studies have also shown that the hepatic blood flow increased or remained unchanged after administration of propofol [10, 11]. Nollert et al. [12] found that low HCT significantly decreased the hepatic blood flow and hepatic metabolism. The present study showed that CL in the HHD group decreased markedly, which was probably related to these factors. As $T_{1/2\gamma}$ is influenced by CL and Vc, $T_{1/2\gamma}$ in the HHD group was prolonged significantly due to an increase of Vc and a decrease of CL and K_{10}.

Conclusion

In summary HHD increases the Vc of propofol, decreases K10 and CL and prolongs $T_{1/2\gamma}$, which probably lead to enhancement of the effectiveness of propofol. The study clinically implies the propofol induction dose should be increased and the maintenance dose reduced in patients undergoing HHD.

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