

Abstract

This bachelor thesis deals with the issue of permanent vascular access for hemodialysis with regard to presence of diabetes mellitus (hereinafter DM). It focuses on peripheral hemodialysis vascular access, which include the arteriovenous fistula (AVF) and arteriovenous fistula created using synthetic material, such as graft (hereinafter AVG). The main objective is to highlight the fact that the vascular system is often affected by systemic diseases like diabetes or atherosclerosis and creating AVF in such patients is often a complicated matter. By intensive postoperative monitoring imminent complications may be detected and prevented. The research is focused on peripheral HCP (AVF, AVG) and on detecting differences in dependance on their individual representation and their functional characteristics at 40 patients treated in Department of Internal Medicine Strahov, General Teaching Hospital Prague. The average age was 70 years. The first group consisted of 21 patients with DM and a the second group 19 non-diabetic paientes. AVF is preferable to AVG even in patients with DM. The actual values of blood flow were measured by a team of nurse and clinical engineer and calculated using special formulas from reagular measurements in both groups of respondents. The obtained values of acutal blood flow have confirmed either good vascular access quality or imminent access complication. Low actual blood flow values confirmed vascular access complications in nine diabetic patients, in which we totally 13 complications were proven (six times AVG thrombosis – four cases in one subject and two times in next subject, furthermore 3 times problems with AVF were revealed. Vascular access thrombosis was the most frequent complication in diabetic subjects, whereas stenosis occured in most subjects without diabetes. These results show that presence of diabetes has a negative impact on the vascular access. Subjects with diabetes suffered from more vascular access complications than respondents without diabetes. Regular monitoring may reveal their potential problems.

Keywords: hemodialysis, vascular access for dialysis, vascular access monitoring, complications of hemodialysis vascular access, diabetes mellitus