

keyword: *hemodilution*

Protocol for isovolaemic **hemodilution** (Freiburg scheme)

- 1) **Inclusion criteria:**
 - central and branch vein occlusion of less than 8 weeks duration (symptoms noticed by patient)
 - patient between 20 and 80 years of age

- 2) **Exclusion criteria**
 - significant ischaemic heart disease (myocardial infarction less than 6 months ago, unstable angina, ischaemic ECG)
 - cerebrovascular event less than 6 months ago
 - grossly abnormal urea and electrolytes
 - significant pulmonary disease
 - haematocrit (PCV) below 38 %

- 3) A full medical **examination** has to be done with special emphasis on the cardiovascular system. The following investigations have to be carried out:
medical: blood-pressure, ECG, X-ray, blood-tests (Hb, Plat, WBC, ESR, PCV, Na⁺, K⁺, urea, creatinine, blood-glucose, Hb A1C, triglycerides, cholesterol, protein), urineanalysis
ophthalmological: visual acuity, full eye-examination including direct and indirect ophthalmoscopy and slit-lamp biomicroscopy.

- 4) Patients will have **venesections** of 300 - 500 ml blood and replacement (at the same time of the bloodletting procedure) with 500 ml 10% Hydroxyethylstarch in the first 1 - 2 weeks to lower the PCV under 35% (about 2-6 haemodilutions). Patients may be admitted for some days, but this is not mandatory. Patients should drink enough (≥ 2 l/d) during the time of treatment. Weekly repeated haemodilutions whenever PCV exceeds 37%. The total venesection period is about 6 weeks. Before every venesection the patient's PCV will be measured to assess whether haemodilution is necessary. If significant problems arise (eg. chest pain, shortness of breath) venesection will be discontinued .

- 5) **Follow up:**
After 6 weeks patients with an ischemic type of CRVO or neovascularisation will have panretinal photocoagulation recommended (Argon laser).

Adjunctive medical (eg. hypertension, diabetes) and ophthalmic (eg. glaucoma) treatment as indicated clinically.