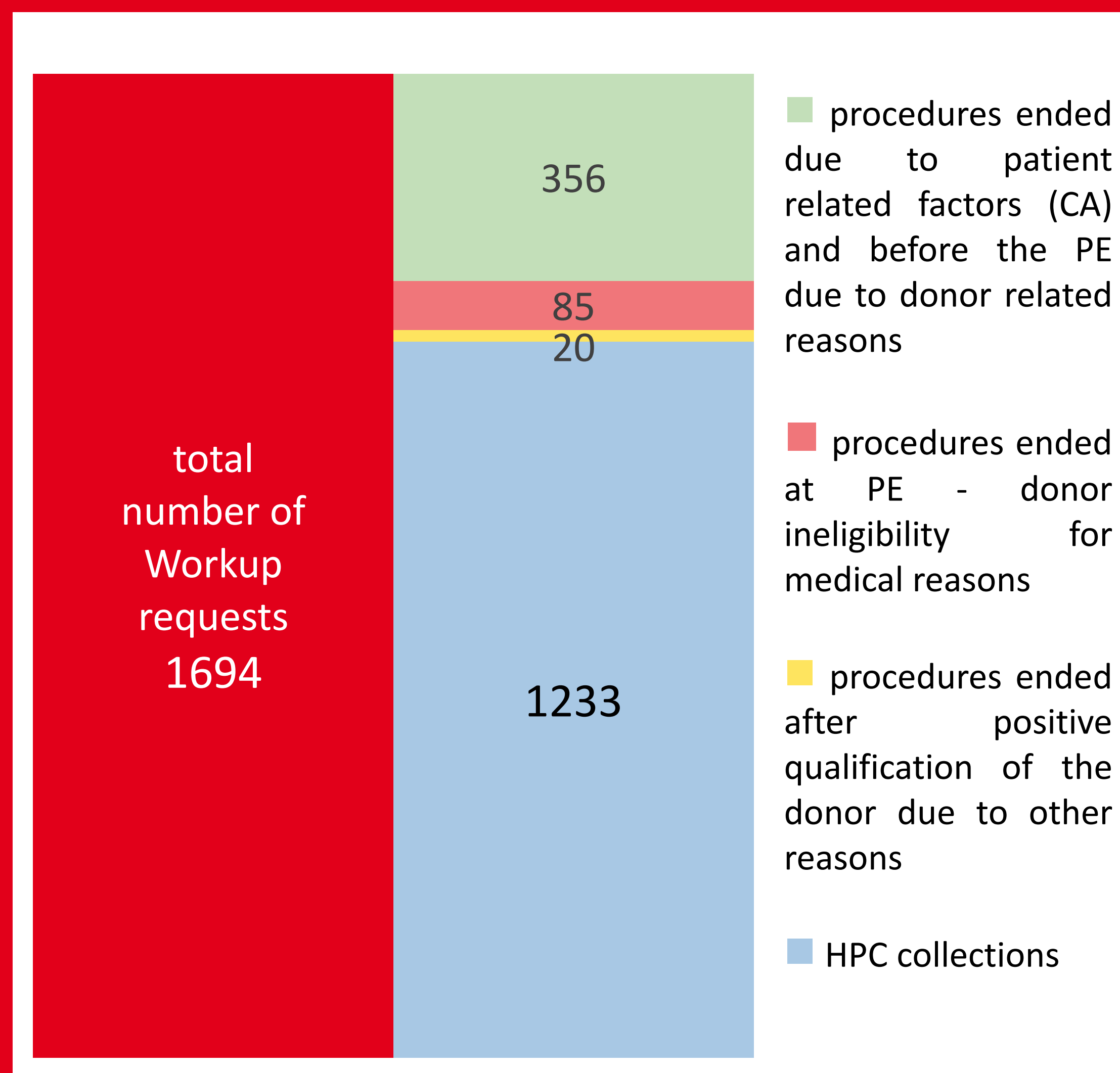


**KEY WORDS:** donors' availability, negative DFC, anemia, iron deficiency in HPC donors

**INTRODUCTION:** The availability of unrelated hematopoietic stem cell (HPC) donors is an important aspect in HPC transplantation. Donor availability is preliminarily verified at the Confirmatory Typing (CT) level, where it is usually lower (about 30-35% unavailability according to self-reported data), and then at the level of coordinating the collection of the HSC (Workup procedure - WU). Reasons for donor unavailability include withdrawal, organizational or private issues, and medical reasons. In 2020 the Donor Center of DKMS Foundation completed 1,694 requests for HPC collection from unrelated donors. 223 procedures were cancelled by the transplant center (TC) and 133 procedures were closed before the PE due to donor related reasons. 89 procedures were closed for non-medical reasons. In the end, 1233 HPC collections were performed either from peripheral blood (PBSC) or bone marrow (BM) (Chart 1). The reasons of donor deferral at the stage of the physical examination (PE) were analysed (Chart 2).

Chart 1: Workup requests completed in 2020



**OBJECTIVES:** Analysis of reasons for medical deferral of donors at PE, with particular emphasis on hematological reasons. Evaluation of opportunities to improve donor availability by identifying reasons for deferral.

**DESCRIPTION:** Donor qualification proceeds in several stages: Confirmatory typing (CT), Work up (WU), and PE, where the medical examination is performed. At the CT stage donors are verified via health questionnaire and medical history. Additional lab tests, such as complete blood count (CBC) and ferritin level may be checked in case of past anemia history, disqualification from blood donations, low BMI, gynaecological problems or vegetarian diet. At the PE stage - laboratory and imaging tests are performed for the final donor clearance (DFC). We analysed the donor-related reasons of negative DFCs, categorizing them into medical and non-medical. Medical causes were divided by specialization and ICD10 code. Diagnoses in the field of hematology were the matter of further investigation.

**RESULTS:** During the PE, 85 HPC donors were deferred for medical findings. The most common reasons for negative DFC were hematological (41%), infectious, including COVID 19-related (19%) and endocrine (14%). The most common reasons for temporary unavailability for hematological reasons were: anemia, usually due to iron deficiency (41%), splenomegaly (24%), monoclonal gammopathy (9%), coagulation abnormalities (6%), neutropenia (6%), leucocytosis (6%), thrombocytopenia and thrombocytosis per 3% each (Chart 3). Anemia was more common among women.

Chart 2: Causes of donor unavailability at the PE level (%)

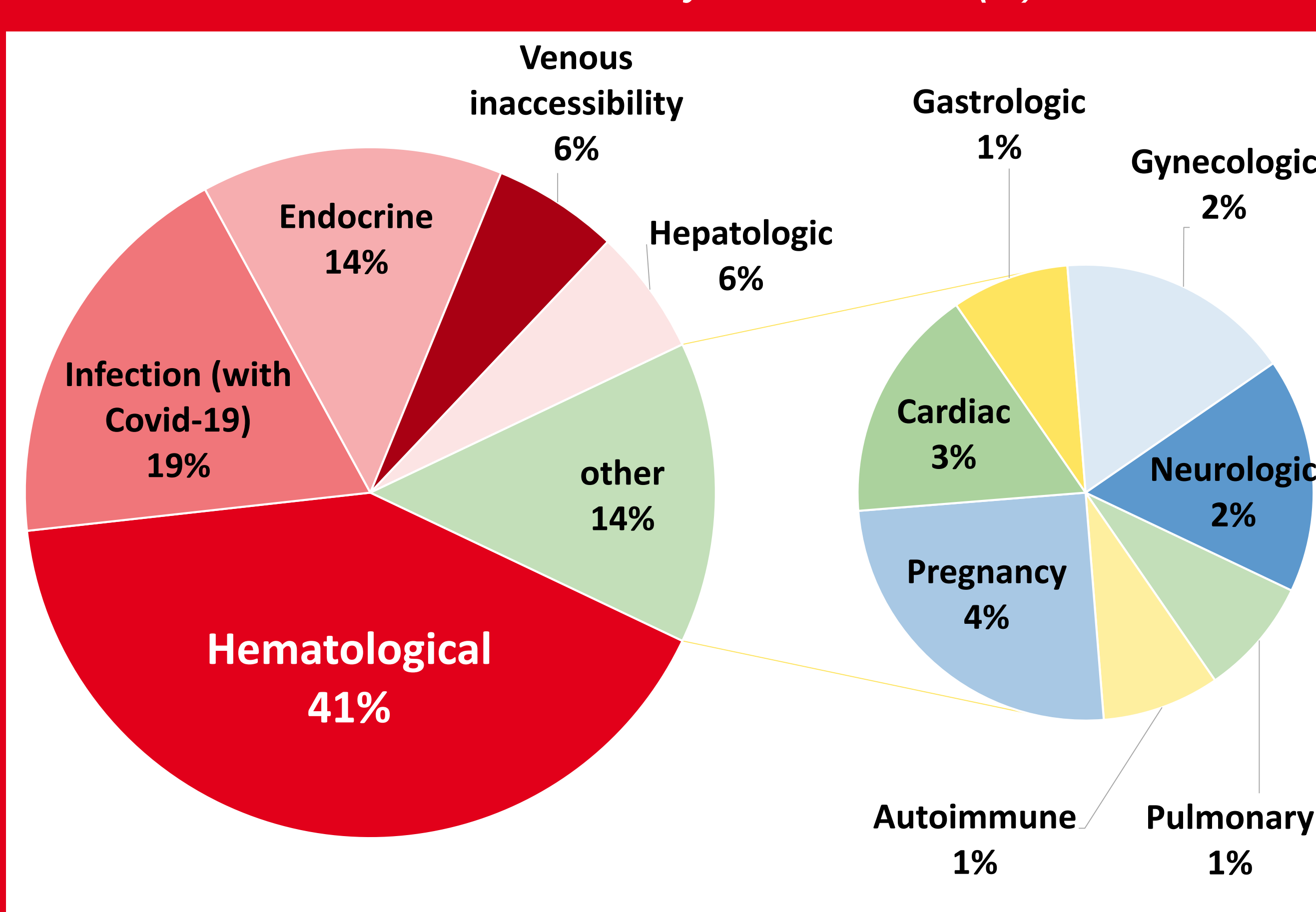
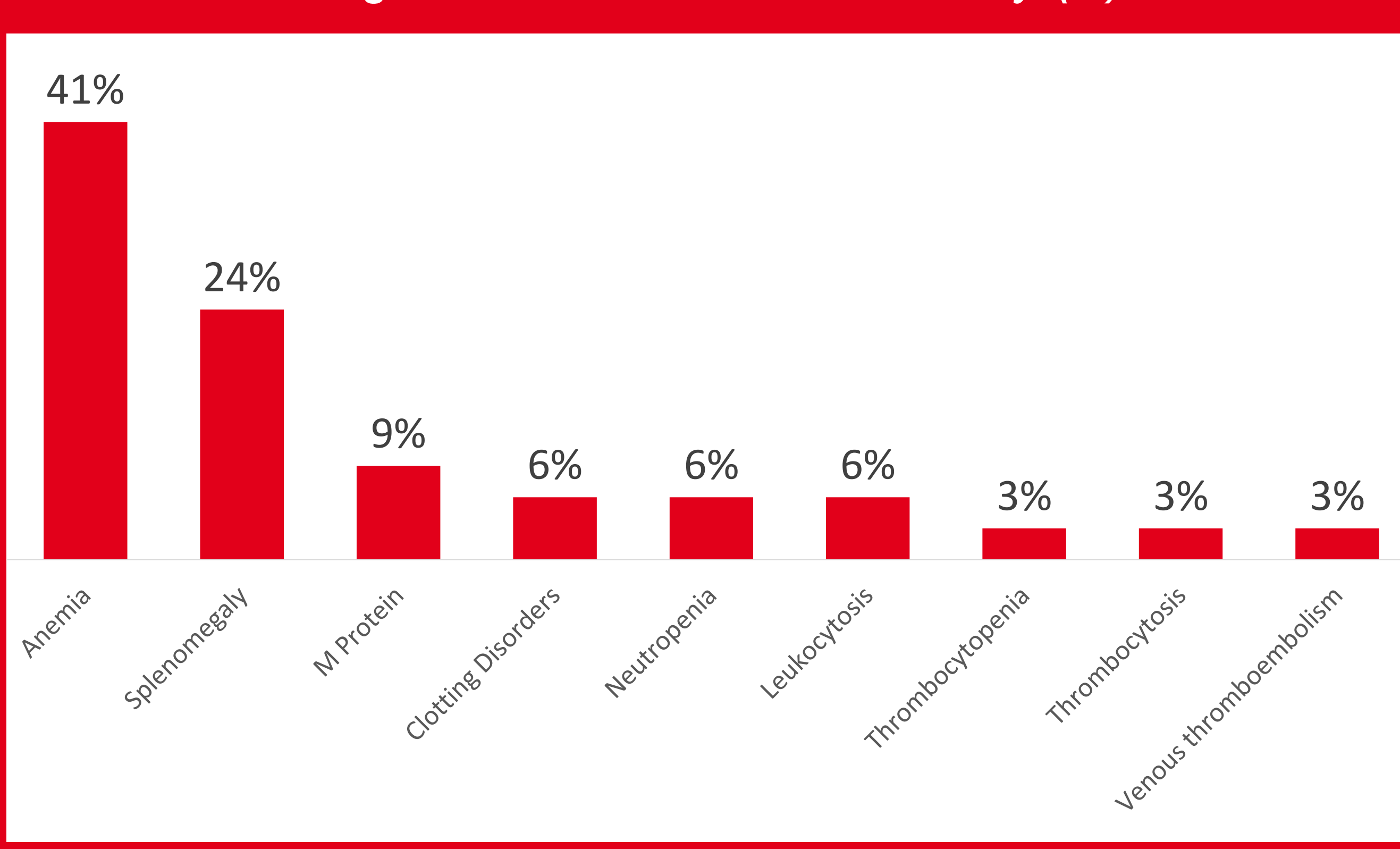


Chart 3: Hematological causes of donor unavailability (%)



## CONCLUSIONS:

- Hematological findings, in particular anemia and iron deficiency, were the most common cause of negative DFC in HPC donors in 2020.
- Despite the verification of the donor's health at the CT level (medical history and questionnaire, additional tests including CBC in case of anemia, disqualification from blood donation, low BMI, gynecological problems or vegetarian diet) anemia still is the major reason for hematological deferral. This suggests that the problem is not limited to those originally identified as at risk of deferral due to anemia.
- The improvement of medical clearance at PE and in the pre-PE period requires additional observations and approach.

