group of frail patients, but this is unlikely to occur in the present environment where currently planned trials with obinutuzumab with either ibrutinib or Abt-199 are starting in this setting.

In summary, in the R/R CLL setting, the role of ofatumumab as monotherapy has been superseded by novel agents, and, more specifically, with ibrutinib showing substantially superior activity in a direct comparison.[6] However, there may be an emerging role for ofatumumab in combination therapies and in maintenance. In the fit, treatment naïve CLL patient, FCR remains standard of care given the lower efficacy rates seen with O-FC. In the unfit, treatment-naïve CLL patient, despite having received FDA approval, the current use of ofatumumab in combination with Clb is not clear, given the demonstrated improved efficacy with the combination of obinutuzumab and Clb.

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Hematopoietic cell transplantation for acute leukemia: selecting donors

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In this issue of *Haematologica*, Gorin and colleagues compare the outcomes after T-cell-replete haploidentical transplantation and autologous transplantation for adults with acute myeloid or lymphoblastic leukemia.[1]

Following induction of complete remission, most adults with acute myeloid or lymphoblastic leukemia are referred for hematopoietic cell transplantation. However, donor choice varies. There is general agreement that an HLA-matched sibling is the most suitable donor. As only about a third of patients who may benefit from hematopoietic cell transplantation have an HLA-matched sibling donor, alternative donor choices include mismatched relatives, unrelated donors (volunteer adults or umbilical cord blood) or self (autologous). In the report by Gorin and colleagues,[1] overall and leukemia-free survival rates after T-cell-replete haploidentical and autologous transplantation were comparable when the haploidentical transplants were performed at experienced transplant centers defined as performing five or more haploidentical transplants over a 6-year period. When haploidentical transplants were performed at centers that performed fewer such transplants, overall and leukemia-free survival rates were better after autologous transplantation.

Selecting a suitable donor for hematopoietic cell transplantation requires careful review of the available literature. A recent report from the National Marrow Donor Program suggests most Caucasians will have an HLA-matched adult unrelated donor or one who is HLA-mismatched at a single locus.[2] However, use of T-cell-replete grafts from haploidentical donors is appealing and increasingly offered to patients. But transplant conditioning regimens and graft-*versus*-host disease prophylaxis vary by graft source and center practice. Consequently, in the absence of appropriately designed clinical trials, comparison and interpretation of outcomes between donor sources are challenging. Gorin and colleagues recommend autolo-

gous transplantation as the alternative to haploidentical transplantation at centers without a haploidentical program. The transplant conditioning regimens and graft-*versus*-host disease prophylaxis regimens in their report are heterogeneous and it is challenging to distinguish between transplant center expertise and the transplantation strategy. Furthermore, the mid-sized and smaller transplant programs are unlikely to have the necessary infrastructure, volume or funds to develop transplantation programs. On the other hand, conducting well-designed multicenter clinical trials that will allow mid- and small-sized centers to adopt strategies developed at the larger centers will permit the adoption of emerging strategies and likely improve survival after hematopoietic cell transplantation.[3,4] One could argue that most transplant centers are competent at performing adult unrelated donor transplants in recent years. Recently, Khera and colleagues compared transplantation outcomes of participants enrolled on Blood and Marrow Transplant Clinical Trials Network (BMTCTN) 0201 to those of participants who were potentially eligible by virtue of known characteristics.[5] BMTCTN 0201 was conducted in North America and randomized primarily adult patients with acute or chronic leukemia or myelodysplastic syndromes to receive either bone marrow or peripheral blood with myeloablative transplant conditioning regimens and calcinuerin inhibitor-containing graft-*versus*-host disease prophylaxis.[6] Based on known characteristics, 494 of 1384 potentially eligible patients were enrolled on BMTCTN 0201 based on the database of the Center for International Blood and Marrow Transplant Research. In multivariate analysis, after adjusting for risk factors associated with mortality, no significant difference in mortality risk for non-trial participants compared to trial participants (hazard ratio 1.09, P=0.22) was demonstrated.[5]

Selecting donors for hematopoietic cell transplantation in the absence of an HLA-matched sibling is challenging.[7] Observational transplant registries are an invaluable resource for studying transplantation outcomes. However, investigators have an obligation to ensure that the groups of interest are comparable not just regarding patient and disease characteristics but also transplant strategies including conditioning regimen, graft-*versus*-host disease prophylaxis and graft source. This would allow for objective interpretation of the findings as well as data for planning clinical trials.

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Aging and blood disorders: new perspectives, new challenges

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"The impact of demographic aging within the European Union is likely to become of major significance… The share of those aged 80 years or above is predicted to almost triple between 2011 and 2060". This statement convinced the board of the European Hematology Association (EHA) to define "aging" as the theme of the year in 2013 and to launch a new Scientific Working Group (SWG) on "Aging and Hematology" in 2014.[1]

Due to this demographic shift, 60% of patients with malignant hemopathies are today older than 65 years and this proportion will continue to increase in the future. Cancer, like chronic diseases, increases exponentially after the age of 50 years. This is the result of a combination of both intrinsic (immune senescence, genetic and epigenetic alterations) and extrinsic events (longer exposure to carcinogens, chronic antigenic stimulation).

Although malignant hemopathies (myelodysplasia, leukemia, lymphoma, myeloma, etc.)[2,3] are a major cause of concern in this age group, other hematologic issues (anemia,[4] cardiovascular problems requiring anticoagulation, etc.) also require specific attention and clear recommendations.

Aging and hematologic cancers

Aging is a complex process influenced by genetic variables as well as environmental factors.[5] It leads to the vulnerability of older patients: a decreased function of various organs already weakened by chronic diseases and the increased susceptibility to infections and carcinogenic genetic damages. The hematopoietic stem cell (HSC) is