



*POST-ASH* Issue 3, 2015

**Final Analysis of the Phase III  
CLL10 Study: FCR versus BR  
in Physically Fit Patients with  
Previously Untreated, Advanced CLL**

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## CME INFORMATION

### OVERVIEW OF ACTIVITY

Each year, thousands of clinicians, basic scientists and other industry professionals sojourn to major international oncology conferences, like the American Society of Hematology (ASH) annual meeting, to hone their skills, network with colleagues and learn about recent advances altering state-of-the-art management in hematologic oncology. As such, these events have become global stages where exciting science, cutting-edge concepts and practice-changing data emerge on a truly grand scale. This massive outpouring of information has enormous benefits for the hematologic oncology community, but the truth is it also creates a major challenge for practicing oncologists and hematologists.

Although original data are consistently being presented and published, the flood of information unveiled during a major academic conference is unprecedented and leaves in its wake an enormous volume of new knowledge that practicing oncologists must try to sift through, evaluate and consider applying. Unfortunately and quite commonly, time constraints and an inability to access these data sets leave many oncologists struggling to ensure that they're aware of crucial practice-altering findings. This creates an almost insurmountable obstacle for clinicians in community practice because they are not only confronted almost overnight with thousands of new presentations and data sets to consider but they are also severely restricted in their ability to review and interrogate the raw findings.

To bridge the gap between research and patient care, this CME activity will deliver a serial review of the most important emerging data sets on the management of chronic lymphocytic leukemia (CLL) from the latest ASH meeting, including expert perspectives on how these new evidence-based concepts may be applied to routine clinical care. This activity will assist medical oncologists, hematologists, hematology-oncology fellows and other healthcare professionals in the formulation of optimal clinical management strategies and the timely application of new research findings to best-practice patient care.

### LEARNING OBJECTIVES

- Develop an understanding of emerging efficacy and side-effect data with novel agents and combination regimens — including next-generation anti-CD20 antibodies and PI3 kinase, BTK and Bcl-2 inhibitors — under evaluation for previously untreated and relapsed/refractory CLL and, where appropriate, facilitate patient access to ongoing trials of these agents.
- Appreciate the recent FDA approvals of novel targeted agents indicated for the treatment of newly diagnosed and relapsed/refractory CLL, and discern how these treatments can be appropriately integrated into clinical practice.
- Compare and contrast the benefits and risks of chemoimmunotherapy with fludarabine/cyclophosphamide/rituximab versus bendamustine/rituximab as first-line therapy for fit patients with CLL.
- Apply recent clinical research findings with the newly FDA-approved combination of obinutuzumab and chlorambucil to the care of patients with previously untreated CLL.
- Recall the activity of salvage therapy with obinutuzumab and chlorambucil after treatment failure of chlorambucil alone in patients with CLL and comorbidities.

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A monitor set to 1280 x 1024 pixels or more

Internet Explorer 7 or later, Firefox 3.0 or later, Chrome,  
Safari 3.0 or later

Adobe Flash Player 10.2 plug-in or later

Adobe Acrobat Reader

(Optional) Sound card and speakers for audio

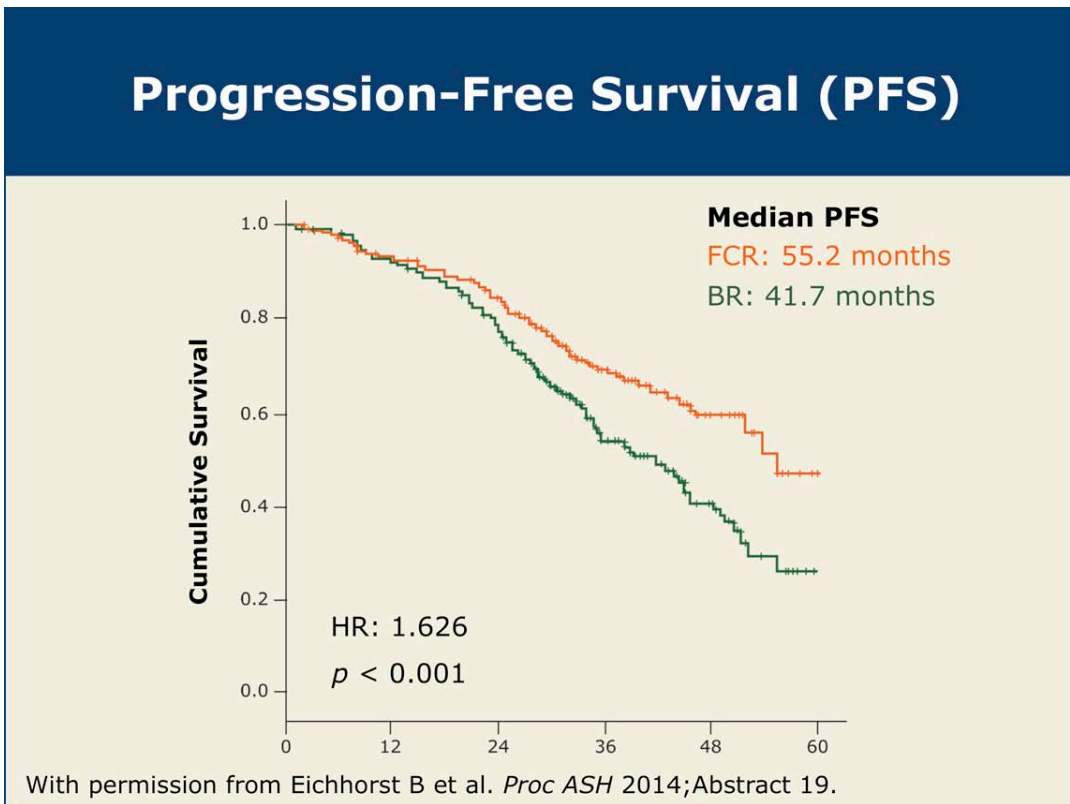
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Expiration date: April 2016

To go directly to slides and commentary for this issue, [click here](#).

When the German CLL Study Group — one of the most prolific clinical trial organizations in the world — launched the landmark Phase III CLL10 trial in 2008, few, if any, expected that the central question the study sought to answer would in essence be outdated by the time the results became available. CLL10 focused on a classic oncology research issue — the comparative clinical benefits of 2 chemobiologic regimens (fludarabine/cyclophosphamide/rituximab [FCR] and bendamustine/rituximab [BR]), and although the results as summarized below have important practical clinical implications today, it is increasingly evident that the overall treatment strategy in this disease is undergoing a massive reconfiguration. For that reason, this issue of *5-Minute Journal Club* evaluates not only the seminal CLL10 trial findings but also a sample of 2014 ASH data sets on several new agents, regimens and strategies that have burst onto the scene in the past couple of years and have many investigators thinking that chronic lymphocytic leukemia (CLL) may soon fall into the basic clinical paradigm of chronic myelogenous leukemia (CML) — namely a chronic disease requiring long-term outpatient management that may be associated with prolonged survival.

Here’s a summary of what happened in San Francisco related to CLL.



## **CLL10: FCR versus BR (patients without del[17p])**

**The updated data from CLL10** continue to support what clinical experience had already strongly suggested, namely that FCR yields clear-cut improvements in disease-related outcomes, including a statistically and clinically significant increase in median progression-free survival (PFS) (55.2 versus 41.7 months) and rates of bone marrow minimal residual disease (MRD) negativity at final restaging (26.6% versus 11.1%). However, with less than 3 years of follow-up, no overall survival benefit has been seen. Just as predictably, the data reveal that FCR produced considerably more toxicity, particularly in older individuals (>65 years) in whom the rate of infection was 47.7% compared to 20.6% with BR. The bottom line is that most investigators believe that both regimens have a role and the risk for toxicity must be carefully considered during patient selection.

### **Impact of MRD status**

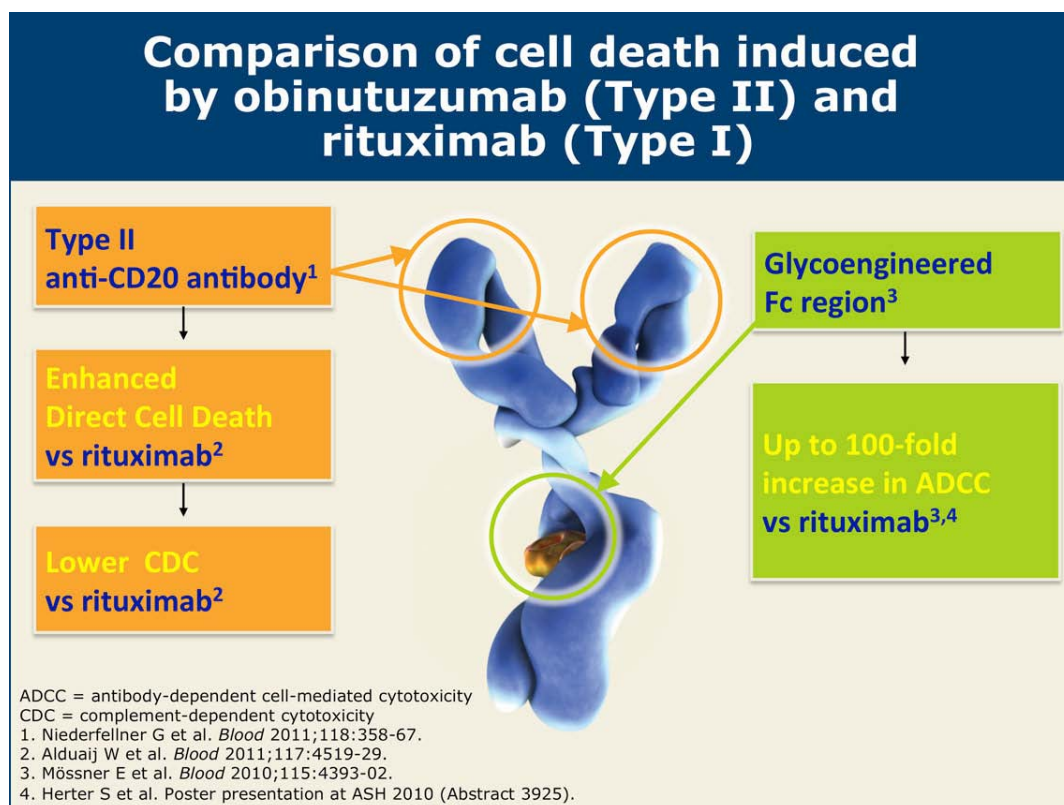
The intriguing concept of defining undetectable levels of disease after treatment to better understand potential prognosis has been explored in various forms across many hematologic cancers. In this regard, at ASH we saw a **report from the German group** evaluating pooled data from the CLL8 (FC versus FCR) and CLL10 trials examining the value of peripheral blood MRD-negative status at response evaluation. What was seen was a strong correlation between MRD status and outcome that seemed at least as predictive of PFS as clinical response, and of particular interest, patients considered to have a partial response clinically had a much better prognosis if their bone marrow was MRD-negative (61.7 versus 28.1 months). Discussions are now ongoing about how to integrate MRD status into prospective trial design and potentially clinical decision-making.

### **Obinutuzumab (Ob)**

Since the FDA approval of Ob in combination with chlorambucil — a drug that many had not been regularly using for CLL — there has been constant questioning about whether this novel Type II anti-CD20 antibody could be employed with other chemotherapeutic regimens. Not surprisingly, a number of studies are ongoing that examine this issue, including the Phase III GREEN trial, which is targeting 800 patients with both previously treated and untreated CLL and evaluates Ob alone or with one of several types of chemotherapy. This effort is also interesting in that it examines a modified dosing scheme of 25 mg on day 1 and 975 mg on day 2 in an attempt to address the high rates of infusion-related reactions that have previously been reported with Ob. At ASH we saw **early safety data** from the previously untreated cohort in the study, which showed a 13.3% rate of Grade 3 or higher infusion-related reactions with 2.5% of patients discontinuing treatment due to this side effect. As greater experience is gained with this interesting agent, it has become clear that these infusion reactions occur mainly during the first cycle and may be related to cell death and/or cytokine release. Efficacy findings from this study are not yet available, and until then, clinicians will need to consider whether they want to dust off chlorambucil and give it a go with Ob. Interestingly, during a recent interview for our audio series with investigator Dr Jeffrey

Sharman, I was surprised to learn that he avoids this issue altogether and unabashedly uses Ob alone as up-front therapy in select patients.

Clearly, the German CLL group was busy at ASH as they also treated us to **more from the pivotal CLL11 trial**, which was first presented at ASCO 2013 and paved the way for the approval of Ob. From that and related presentations, we learned, among other things, that Ob/chlorambucil is superior to rituximab/chlorambucil in a number of ways, including rates of MRD negativity in blood (38% versus 3%). Additional data unveiled at ASH evaluated patients in the trial who were initially randomly assigned to chlorambucil alone but upon relapse (generally due to lack of response to chlorambucil) were crossed over to Ob/chlorambucil. Of great interest, 26 of 30 patients (87%) experienced objective responses, further suggesting that Ob itself might have significant and perhaps underappreciated intrinsic anti-CLL activity that is greater than that previously observed with rituximab monotherapy, an important and useful therapeutic tool in follicular lymphoma.



## Anti-CD20 maintenance in CLL

Although maintenance rituximab has been commonly used in many patients receiving R-chemotherapy for follicular and mantle-cell lymphoma, our survey and polling data have clearly illustrated that hematologic investigators do not endorse this approach in CLL. However, provocative results from **2 interesting trials** unveiled at ASH have some beginning to reevaluate this stance.

First, the AGMT-CLL8/a trial randomly assigned 263 patients who completed first- or second-line chemotherapy/rituximab to 24 months of rituximab maintenance or observation and demonstrated an approximately 50% reduction in the rate of disease

progression with maintenance. No survival benefit was seen, although crossover in the control group was allowed. The other related and cleverly named Phase III effort (the PROLONG trial) evaluated ofatumumab maintenance after second- or third-line treatment with chemotherapy/anti-CD20, and again there was an approximate 50% reduction in risk of disease progression. Although more data on this important question would be ideal, some investigators feel that these results are enough to compel clinicians to discuss and/or recommend this approach in select patients, at least until the many new options and treatments are sorted out.

### **Ibrutinib**

You can't attend a conference these days without witnessing a new and relevant data set with this blockbuster Bruton tyrosine kinase inhibitor, and ASH was no exception, as we saw results from the Phase II RESONATE™-17 trial focused on 144 patients with del(17p) CLL who experienced disease progression while receiving between 1 and 4 prior lines of therapy. Perhaps not surprisingly, as few of these studies fail to disappoint, most patients had objective responses, and about 80% were progression free at 1 year. These relevant findings are central to the current first-line approval of the drug in this situation. However, it is important to note that although ibrutinib results in similar response rates in this population, these patients have shorter PFS and overall survival.

Interestingly, there is a belief that del(17p) may only be part of the story, and for that reason investigators at MD Anderson evaluated CKT (complex metaphase karyotype by whole genome sequencing defined as 3 or more distinct chromosomal abnormalities) in 100 consecutive cases of CLL treated with ibrutinib. What they found is that CKT is a better predictor of benefit from ibrutinib than del(17p). However, this clearly needs additional confirmation before whole genome sequencing makes its way into trials or clinical practice.

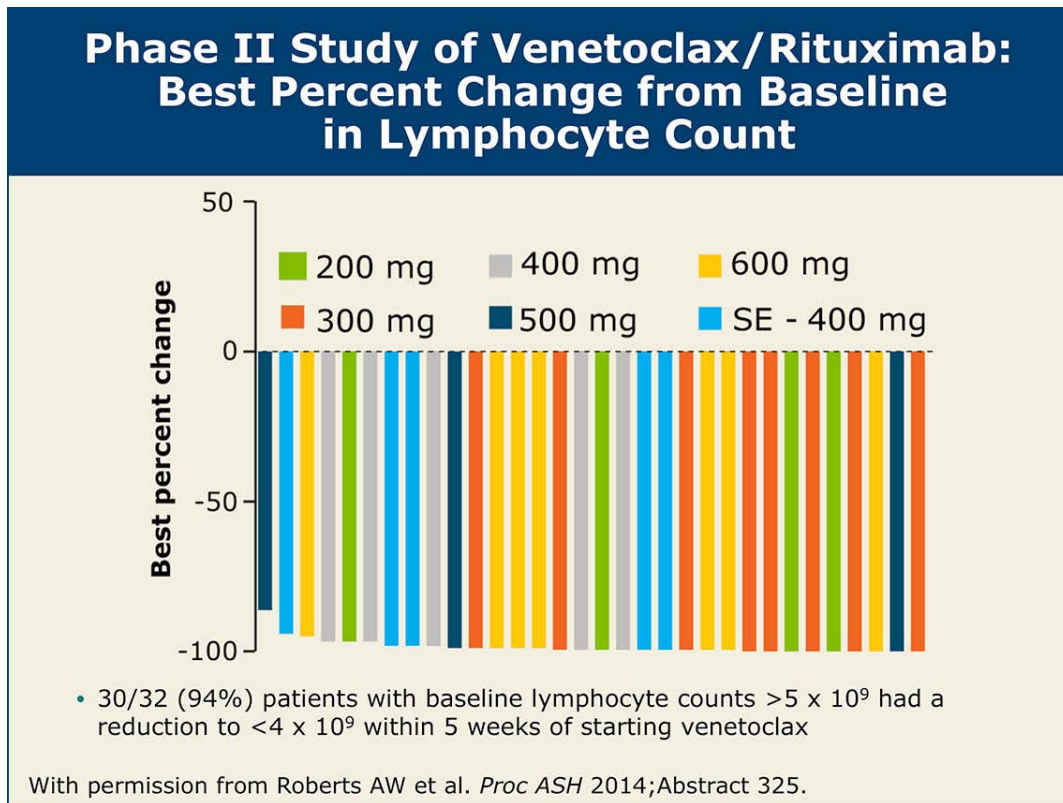
### **Idelalisib**

One of the important features of ibrutinib in CLL is the consistency of response in patients with adverse prognostic factors like 17p deletion, but the drug is not alone in this regard. At ASH we saw a **subset analysis** from the major Phase III trial reported in the *New England Journal* demonstrating that idelalisib/rituximab is a highly effective regimen, including in patients with del(17p), del(11q) and unmutated IGHV. These findings suggest that this regimen may have an important early role in patients with these genetic abnormalities who have previously received or are not candidates for ibrutinib.

### **Venetoclax (formerly ABT-199)**

Despite the new moniker, more data presented at ASH reveal that things remain entirely the same and that this novel Bcl-2 inhibitor/antiapoptotic agent is a very active drug. Most notably, in a **Phase II trial** of 49 patients with relapsed or refractory CLL/small lymphocytic lymphoma, the combination of venetoclax with rituximab demonstrated an impressive 88% objective response rate with 31% complete response (CR) or CR with incomplete blood count recovery, including in 7 of 9 patients with

del(17p). MRD negativity in the bone marrow was recorded in 17 patients. Significantly, 5 dose cohorts were studied, and it appears that a schedule was uncovered that seems to avoid tumor lysis syndrome — a complication reported previously with this agent.



Although it remains to be seen how these novel and encouraging therapies will be optimally mixed, matched and sequenced in CLL, it seems highly likely that the survival of patients will continue to be extended and perhaps soon mirror the normal life expectancies of patients under active treatment for CML. ASH 2014 will be remembered as another important step forward in this rewarding march toward a new standard.

Next on this series, we provide an ASH update on myeloproliferative neoplasms, including more data on the most recently approved treatment in these diseases, the use of ruxolitinib in polycythemia vera.

Neil Love, MD

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# Final Analysis of the Phase III CLL10 Study: FCR versus BR in Physically Fit Patients with Previously Untreated, Advanced CLL

## Presentation discussed in this issue

Eichhorst B et al. **Frontline chemoimmunotherapy with fludarabine (F), cyclophosphamide (C), and rituximab (R) (FCR) shows superior efficacy in comparison to bendamustine (B) and rituximab (BR) in previously untreated and physically fit patients (pts) with advanced chronic lymphocytic leukemia (CLL): Final analysis of an international, randomized study of the German CLL Study Group (GCLLSG) (CLL10 study).** *Proc ASH 2014*; **Abstract 19.**

Slides from a presentation at ASH 2014 and transcribed comments from a recent interview with Jonathan W Friedberg, MD, MMSc (1/8/15)

**Frontline Chemoimmunotherapy with Fludarabine (F), Cyclophosphamide (C), and Rituximab (R) (FCR) Shows Superior Efficacy in Comparison to Bendamustine (B) and Rituximab (BR) in Previously Untreated and Physically Fit Patients (pts) with Advanced Chronic Lymphocytic Leukemia (CLL): Final Analysis of an International, Randomized Study of the German CLL Study Group (GCLLSG) (CLL10-Study)**

**Eichhorst B et al.**

*Proc ASH 2014*; Abstract 19.

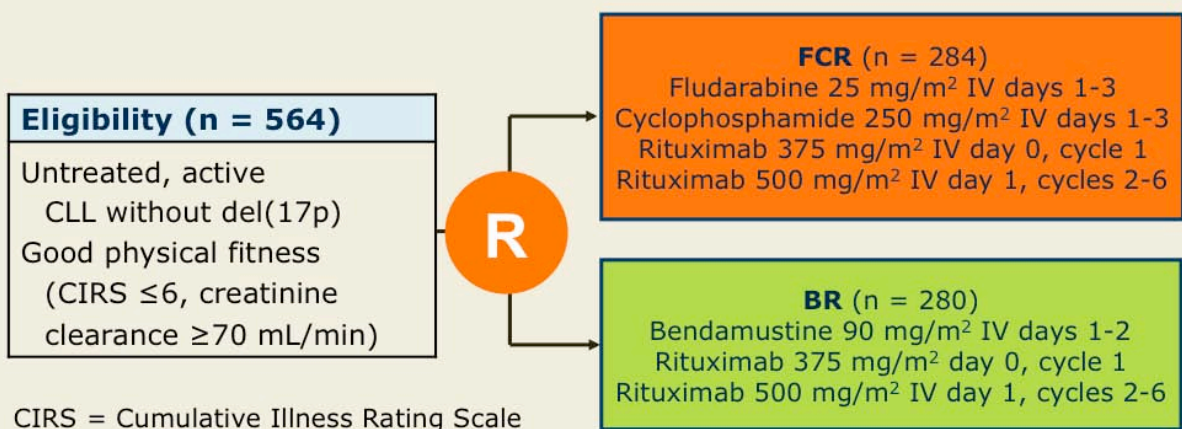
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# Background

- Fludarabine/cyclophosphamide/rituximab (FCR) is the standard front-line treatment regimen for physically fit patients with advanced chronic lymphocytic leukemia (CLL) with low comorbidity burden.
  - The addition of rituximab to fludarabine/cyclophosphamide (FC) in the CLL8 trial led to prolongation of progression-free (PFS) and overall survival (OS) as first-line treatment for physically fit patients with CLL (*Leuk Lymphoma* 2013;54:1821).
  - However, the FCR regimen was associated with a high rate of severe infections and higher rates of secondary neoplasias compared to FC.
- **Study objective:** To evaluate the efficacy and tolerability of FCR in comparison to bendamustine/rituximab (BR) as front-line therapy for fit patients with CLL without del(17p).

Eichhorst B et al. *Proc ASH* 2014;Abstract 19.

## CLL10: Final Analysis of a Phase III Trial of FCR versus BR in Advanced CLL



**Primary endpoint:** Noninferiority of BR vs FCR for PFS (hazard ratio BR/FCR < 1.388)

Eichhorst B et al. *Proc ASH* 2014;Abstract 19.

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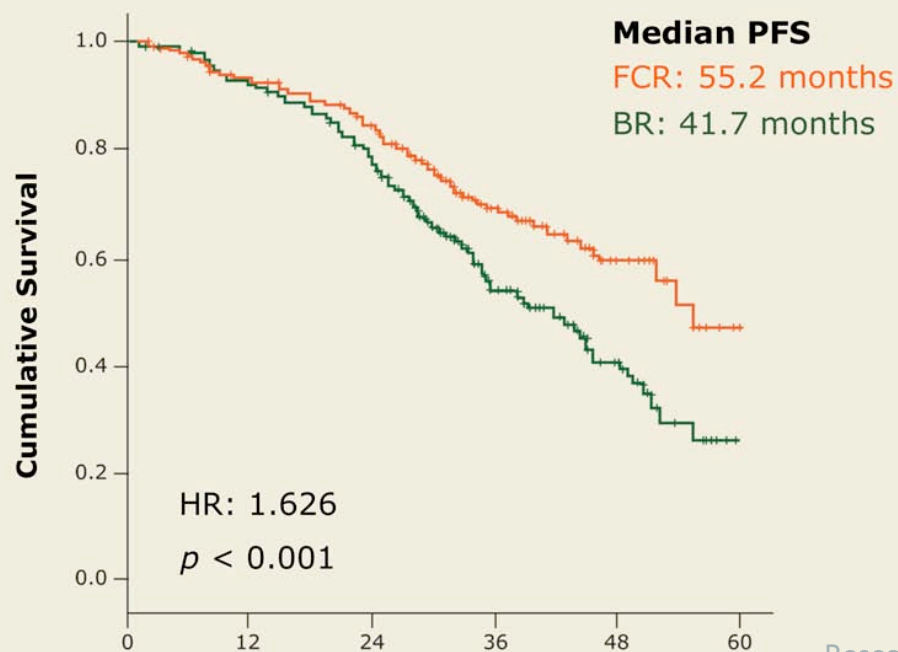
# Patient Characteristics

Characteristics	FCR (n = 282)	BR (n = 279)
Median age	61.0 years	62.1 years
Age > 65	30.5%	38.7%
Male	71.3%	74.2%
Median time since diagnosis	21.6 months	24.6 months
ECOG PS = 0	64.1%	64.1%
CIRS	2	2
Mean number of cycles	5.27	5.41

Eichhorst B et al. *Proc ASH 2014*;Abstract 19.

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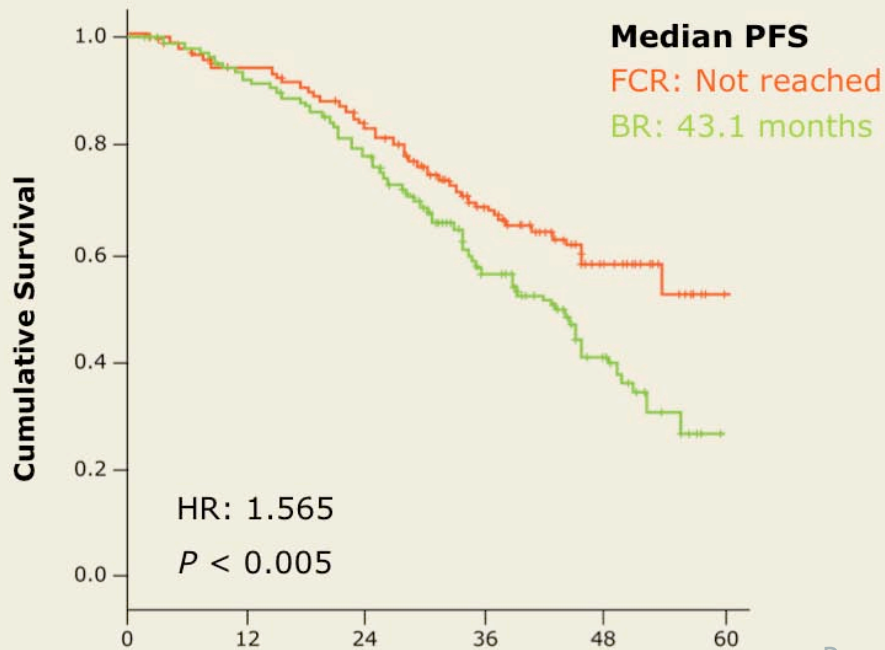
# Progression-Free Survival (PFS)



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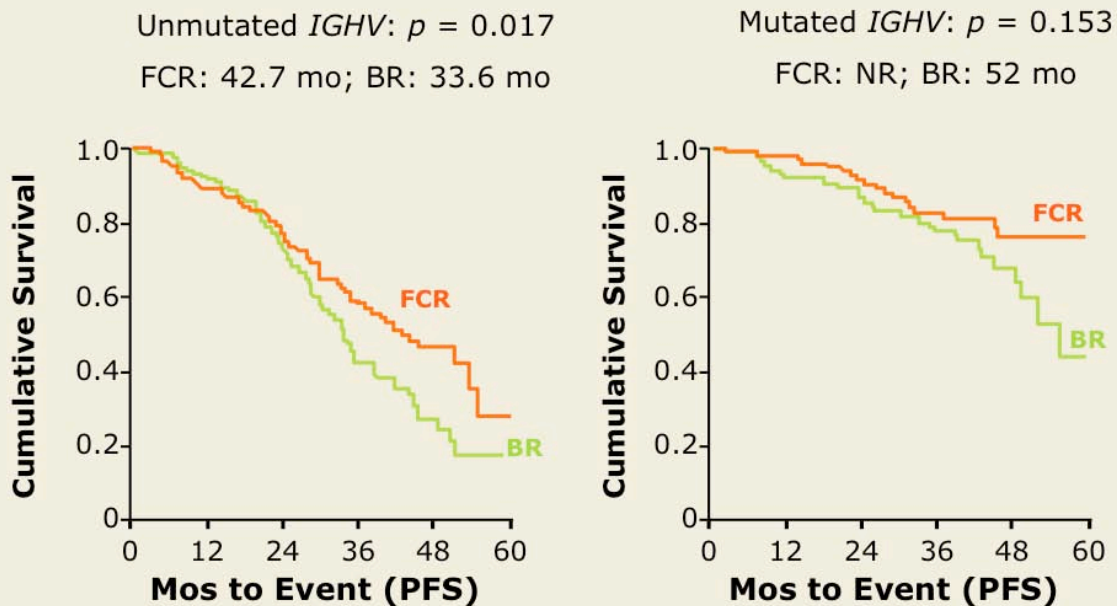
# PFS in IGHV Matched Population



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# PFS by IGHV Status



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## Response

	<b>FCR (n = 282)</b>	<b>BR (n = 279)</b>	<b>p-value</b>
Overall response rate	95.4%	95.7%	1.0
Complete response (CR + CRi)	39.7%	30.8%	0.034
Complete response (CR)	35.1%	30.4%	NR
CR with incomplete marrow recovery (CRi)	4.6%	0.4%	NR
Partial response (PR)	55.7%	64.9%	NR
Stable disease/progressive disease	2.2%	2.2%	NR

NR = not reported

Eichhorst B et al. *Proc ASH 2014*;Abstract 19.

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## Minimal Residual Disease (MRD)

<b>MRD negativity (intent to treat)</b>	<b>FCR (n = 282)</b>	<b>BR (n = 279)</b>
BM at FR	26.6%	11.1%
PB at FR	48.6%	38.4%
PB 12 months after FR	19.7%	9.0%
PB 18 months after FR	18.0%	8.5%
<b>MRD negativity (evaluative patients)</b>	<b>FCR</b>	<b>BR</b>
PB at FR (n = 185, 170)	74.1%	62.9%
PB 18 months after FR (n = 65, 65)	53.8%	24.6%

BM = bone marrow; FR = final restaging; PB = peripheral blood

Eichhorst B et al. *Proc ASH 2014*;Abstract 19.

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## Select Adverse Events

Adverse event	FCR (n = 279)	BR (n = 278)	p-value
Neutropenia	84.2%	59.0%	<0.001
Anemia	13.6%	10.4%	0.20
Thrombocytopenia	21.5%	14.4%	0.03
Infection	39.1%	26.8%	<0.001
During therapy (tx) only	22.6%	17.3%	0.1
During first 5 mo after tx	11.8%	3.6%	<0.001
In patients ≤65 years	35.2%	27.5%	0.1
In patients >65 years	47.7%	20.6%	<0.001
Secondary neoplasm*	6.1%	3.6%	0.244

\* sAML/MDS: FCR (n = 6); BR (n = 1)

Eichhorst B et al. *Proc ASH 2014*;Abstract 19.

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## Author Conclusions

- Final analysis of the Phase III CLL10 study demonstrated inferiority of BR to FCR with regard to PFS and complete response rate.
- BR is associated with lower rates of neutropenias and severe infections in elderly patients.
- FCR remains standard therapy for fit patients.
- BR may be considered for fit elderly patients as an alternative.

Eichhorst B et al. *Proc ASH 2014*;Abstract 19.

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## **Investigator Commentary: CLL10 – Efficacy and Tolerance of FCR in Comparison with BR as Front-Line Therapy for Fit Patients with CLL without Del(17p)**

The preliminary results of this large Phase III study with relatively young patients were presented at ASH last year, but these are the final data that demonstrate a higher complete response rate for patients who received FCR. Perhaps more importantly, the rate of MRD with FCR was 74% compared to 62% with BR. With 18 months of follow-up, 53% of patients who received FCR remained MRD-negative compared to only 24% with BR. Obviously, toxicity was a little higher with FCR.

What these results mean for the practicing oncologist is that we have choices. Both regimens are active. If you have a young, fit patient without a lot of contraindications to treatment, that patient's best chance at a prolonged disease-free interval using chemoimmunotherapy is with FCR. But if you have any hesitation about tolerance or the patient is older, BR is an acceptable alternative.

***Interview with Jonathan W Friedberg, MD, MMSc, January 8, 2015***

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