Jefferies 2014 Global Healthcare Conference

geron

John Scarlett, M.D.
Chief Executive Officer
June 4, 2014

forward-looking statements

Except for statements of historical fact, this presentation contains forward-looking statements made pursuant to the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including without limitation, statements regarding: anticipated timelines for data reporting, responding to the full and partial clinical holds and planned clinical trial initiation; imetelstat's clinical activity in the bone marrow, its potential to be disease modifying and other statements regarding its safety and potential therapeutic benefit; the ability of the Company and Mayo Clinic to fulfill the FDA's requirements to lift the clinical holds; the ability to manage myelosuppression or other adverse events, or liver function abnormalities and liver toxicity, through dose hold rules, dose modifications or other changes to clinical procedures; the development plans for imetelstat and potential milestones and costs related thereto and the timing thereof, including 2014 cash operating expense guidance of $35-$40 million; the number and types of indications we may pursue; data expected at ASH annual meeting in December 2014; that imetelstat has patent protection through 2025; and other statements that are not historical facts. These statements involve risks and uncertainties that can cause actual results to differ materially from those in such forward-looking statements. These risks and uncertainties include, without limitation, risks and uncertainties regarding: the uncertainty that LFT abnormalities may have consequences that are clinically significant, long-term or irreversible; adverse safety events could cause the benefit-risk profile for imetelstat to become unacceptable, including without limitation as a result of the inability to manage myelosuppression or other adverse events, or LFT abnormalities, through dose hold rules, dose modifications or other changes to clinical procedures; whether the Company's nonclinical animal data will be sufficient to cause the FDA to release the full clinical hold; whether the FDA releases the clinical hold on our IND or the IND of Dr. Tefferi for the investigator-sponsored trial of imetelstat in myelofibrosis at Mayo Clinic (Myelofibrosis IST); whether we or Dr. Tefferi of Mayo Clinic may be able to provide adequate information or data to respond to the clinical holds; our reliance on the conduct of and data from investigator-sponsored trials of imetelstat and our ability to advance imetelstat to subsequent Geron-sponsored clinical trials; the fact that preliminary efficacy and safety data that we have reported from the Myelofibrosis IST may be materially different from the final data generated in the trial, and that one or more of the efficacy and safety outcomes in the Myelofibrosis IST may materially change as additional patients were enrolled and treatment continues and additional and updated patient data become available; that Dr. Tefferi may not publicize data at ASH in December 2014; numerous risks and uncertainties with regard to manufacturing imetelstat; and those other risks and uncertainties inherent in the development of potential therapeutic products such as successful company-sponsored clinical trial results, technical, scientific and regulatory challenges, sufficient capital resources, limitations on our freedom to operate arising from intellectual property of and challenges to our intellectual property by others, and challenges or enforcement of Geron's intellectual property rights. More detailed additional information and factors that could cause actual results to differ materially from those in the forward-looking statements is contained in Geron's periodic reports filed with the Securities & Exchange Commission primarily under the heading "Risk Factors," including in Geron's quarterly report on Form 10-Q for the quarter ended March 31, 2014. Undue reliance should not be placed on Geron's forward-looking statements, and Geron disclaims any obligation to update these forward-looking statements to reflect future information, events or circumstances.

developing imetelstat to treat hematologic myeloid malignancies

- **Imetelstat: differentiated and proprietary oncology product**
  - first telomerase inhibitor in clinical development
  - discovered and developed by Geron; IP through 2025 with patent extension expected beyond
  - may selectively inhibit telomerase-driven proliferation of malignant cells in bone marrow, targeting the underlying disease
- **Data from two clinical trials that show disease-modifying activity**
  - **essential thrombocythemia (ET):** durable hematologic and molecular responses in Phase 2 trial presented at ASH 2012 and updated at EHA 2013 provided mechanistic proof-of-concept
  - **myelofibrosis (MF) IST:** remissions (CR+PR) observed in 5 out of the first 22 patients from preliminary data from investigator-sponsored trial (IST) presented at ASH 2013
    - overall response (CR+PR+CI) rate of 40.9% (9/22 patients)
    - updated and additional data expected at ASH 2014
- **Development delayed by clinical holds**
  - safety signal of hepatotoxicity observed in company-sponsored Phase 2 trials
    - full clinical hold on company's IND – patients in Phase 2 ET and MM trials cannot receive further treatment with imetelstat, no new trials can be initiated until hold is lifted or partially lifted
    - partial clinical hold on Dr. Tefferi's myelofibrosis IND – previously enrolled patients (with MF, MDS RARS and blast-phase MF) deriving clinical benefit may continue treatment with imetelstat

MM = multiple myeloma; MDS RARS = myelodysplastic syndromes refractory anemia with ringed sideroblasts; IND = investigational new drug

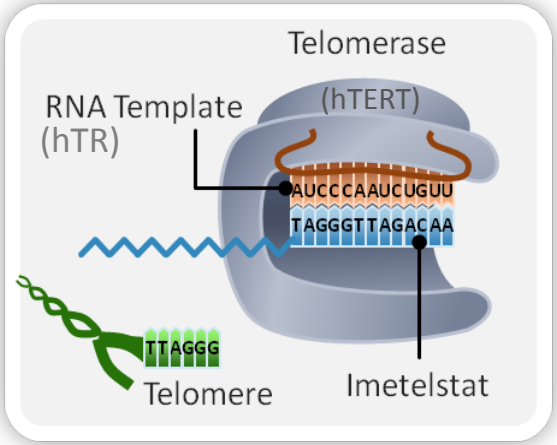
imetelstat
a telomerase inhibitor

Telomerase enzyme:

- Adds nucleotide repeats to offset the loss of telomeric DNA occurring with each replication cycle
- Not active in somatic cells; transiently upregulated in normal hematopoietic progenitor cells to maintain telomeres and support controlled proliferation
- Highly upregulated in malignant progenitor cells, enabling continued and uncontrolled proliferation

Inhibiting telomerase activity as an approach to treating cancer:

- Limits proliferative capacity of malignant cells, particularly progenitor cells

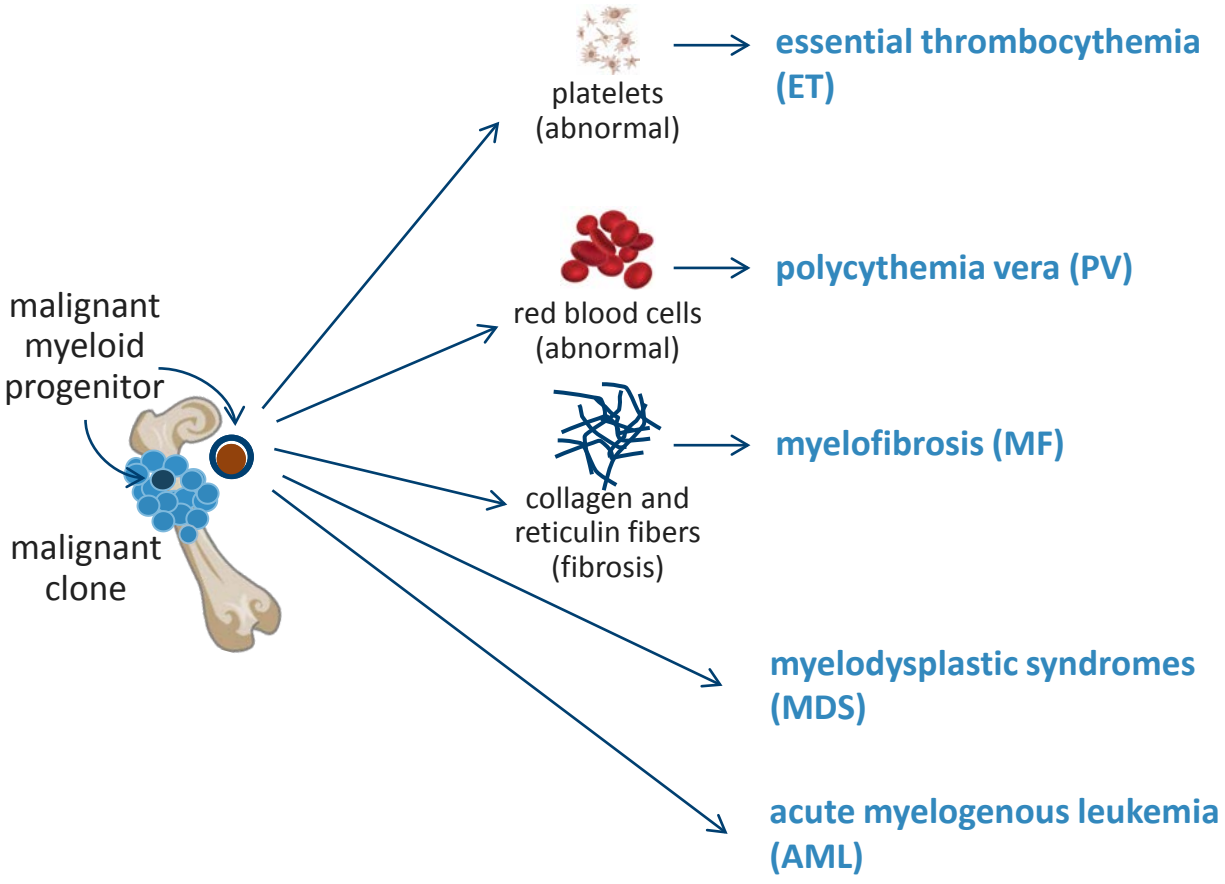


imetelstat binds to RNA template
preventing maintenance of telomeres

Imetelstat: a novel first-in-class telomerase inhibitor

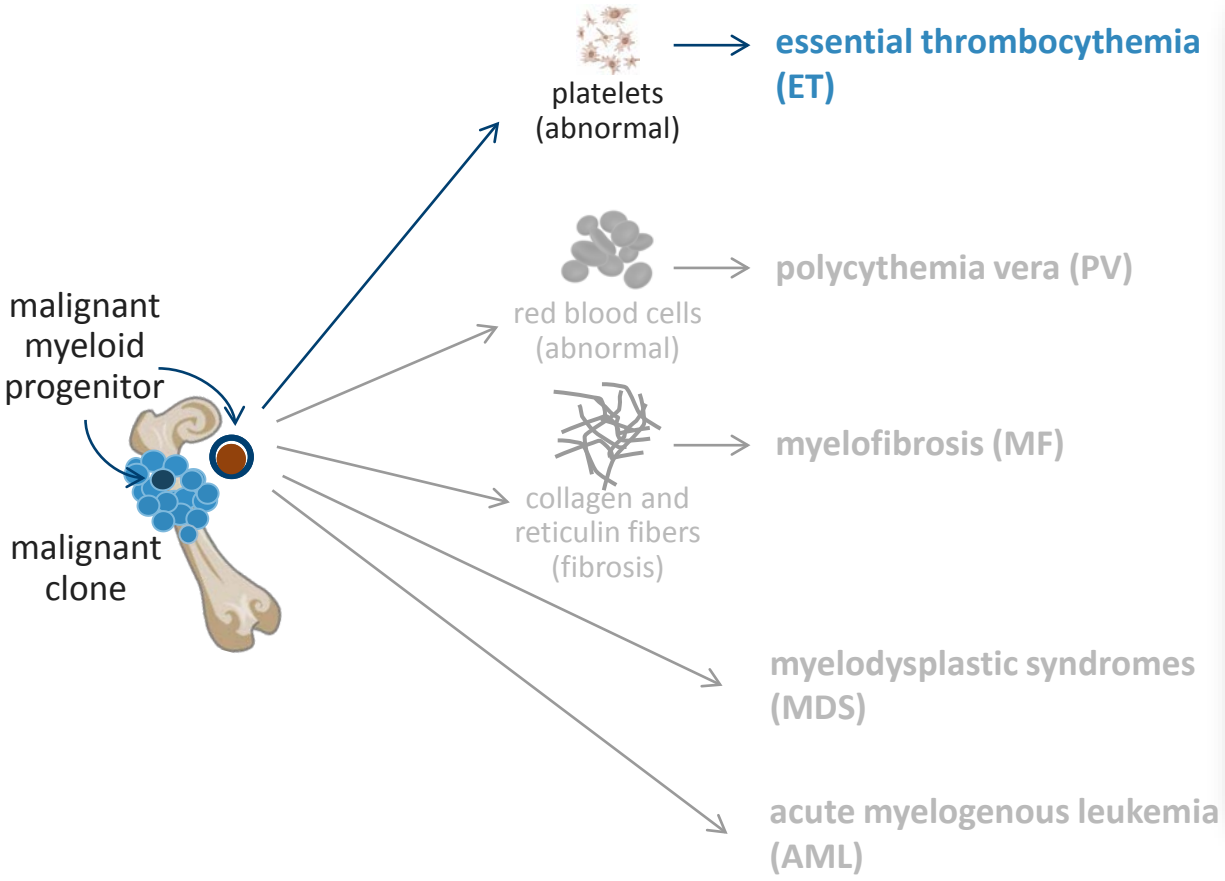
- **Proprietary:** 13-mer thio-phosphoramidate oligonucleotide complementary to telomerase RNA template, with covalently-bound lipid tail to increase cell permeability/tissue distribution
- **Long half-life** in bone marrow, spleen, liver:
  estimated human t½ = 41 hrs with doses 7.5 – 11.7 mg/kg
- **Potent competitive inhibitor** of telomerase enzyme activity:
  IC50 = 0.5-10 nM (cell-free)
- **Studied by Geron in 374 patients** as a single agent or in combination with standard therapies (primarily solid tumors)

hematologic myeloid malignancies
arise from malignant progenitors in the bone marrow



essential thrombocythemia

proof-of-concept for selective effect on malignant clone



- **Hematologic response:** to assess effect of imetelstat on platelet count
- **Molecular response:** (reduction in JAK2V617F allele burden) to assess selective effect on malignant clone
- **No plans to develop imetelstat for commercial use in ET:**
  - well-served by current drug therapies (e.g., hydroxyurea, anagrelide, interferon-alpha)
  - median survival is minimally impacted by the disease

essential thrombocythemia data
responses suggest disease-modifying activity

	EHA 2013	Primary analysis (per clinical protocol)
Hematologic response rate	**18/18 (100%)**	**18/18 (100%)**
Complete response (CR) rate Partial response (PR) rate	16/18 (89%) 2/18 (11%)	16/18 (89%) 2/18 (11%)
Median time on therapy (range)	14 months (3 months – 2.5 years)	18.5 months (7.5 months – 2.9 years)
Patients who attained a CR and remained on study	13/16 (81%)	10/16 (63%)
Median duration of hematologic response	Not reached	Not reached
Molecular response rate	**7/8 (88%)**	**7/8 (88%)**
Reduction in allele burden at best response	72% - 96%	72% - 96%
Median duration of molecular response	Not reached	17.2 months

CR = Normalization of platelets (<400 x 10^3/µL) maintained for at least 4 consecutive weeks, in the absence of thromboembolic events

PR = Platelets <600 x 10^3/µL or a 50% reduction in platelets maintained for at least 4 consecutive weeks, in the absence of thromboembolic events

Data for EHA as of May 2013; data for primary efficacy analysis as of October 2013

essential thrombocythemia data
most frequently reported adverse events

20 patients (18 ET & 2 PV) were enrolled in the study

Adverse Event Category	All Grades / All Events	≥Grade 3 / All Events	All Grades / Related §	≥Grade 3 / Related §
Infections	20 (100%)	4 (20%)	4 (20%)	**1 (5%)***
GI Events (Nausea/Diarrhea/Constipation/Vomiting)	19 (95%)	1 (5%)	19 (95%)	**0**
Fatigue	18 (90%)	2 (10%)	17 (85%)	**2 (10%)**
Musculoskeletal Disorders (Pain)	16 (80%)	1 (5%)	9 (45%)	**0**
Cytopenias	14 (70%)	10 (50%)	13 (65%)	**9 (45%)**
Hepatobiliary (laboratory abnormalities and clinical events and complications)	14 (70%)	2 (10%)	13 (65%)	**2 (10%)****
Headache	14 (70%)	3 (15%)	9 (45%)	**1 (5%)**
Bleeding Events	14 (70%)	2 (10%)***	9 (45%)	**0**
Dizziness	12 (60%)	0	4 (20%)	**0**
Pyrexia	10 (50%)	0	5 (25%)	**0**

§ Related = at least possibly attributed to imetelstat by investigator

* Influenza

** 2 patients:
- 1 pt. with reversible Grade 3 ALT & AST
- 1 pt. with Grade 3 hepatic cirrhosis and encephalopathy who died of bleeding esophageal varices (Grade 5)

*** 2 patients:
- 1 pt. with Grade 3 post-operative hemorrhagic anemia
- 1 pt. with Grade 3 epistaxis

Data as of April 2014; PV = polycythemia vera; ALT = alanine transaminase; AST = aspartate transaminase

essential thrombocythemia data
laboratory abnormalities

20 patients (18 ET & 2 PV) were enrolled in the study

Laboratory Parameter*	All Grades	Grade 3	Grade 4
Alanine transaminase (ALT)	18 (90%)	2 (10%)**	0
Aspartate transaminase (AST)	18 (90%)	1 (5%)**	0
Alkaline phosphatase (ALP)	15 (75%)	0	0
Bilirubin, total	8 (40%)	0	0
Neutropenia	16 (80%)	8 (40%)	3 (15%)
Anemia	20 (100%)	3 (15%)	0
Thrombocytopenia	11 (55%)	1 (5%)	0

* Shift from baseline, any abnormality recorded
No cases of febrile neutropenia were reported

- **Hepatic enzyme abnormalities observed in all patients**
  - majority were Grade 1 elevations in ALT/AST
  - two patients (**) with Grade 3 increases in ALT/AST reversed on dose reduction
  - serial Grade 1 ALP increase in four patients, with primarily unconjugated Grade 1 hyperbilirubinemia
- **Hepatic experts engaged as consultants since early 2013:**
  - evaluated initial LFT data set from Phase 2 ET trial, as well as hepatobiliary SAEs from all imetelstat clinical trials, and subsequent LFT data on an ongoing basis
  - have not recommended any changes to the use or administration of imetelstat in Phase 2 ET or MM trials

Data as of April 2014; LFT = liver function test; SAEs = serious adverse events

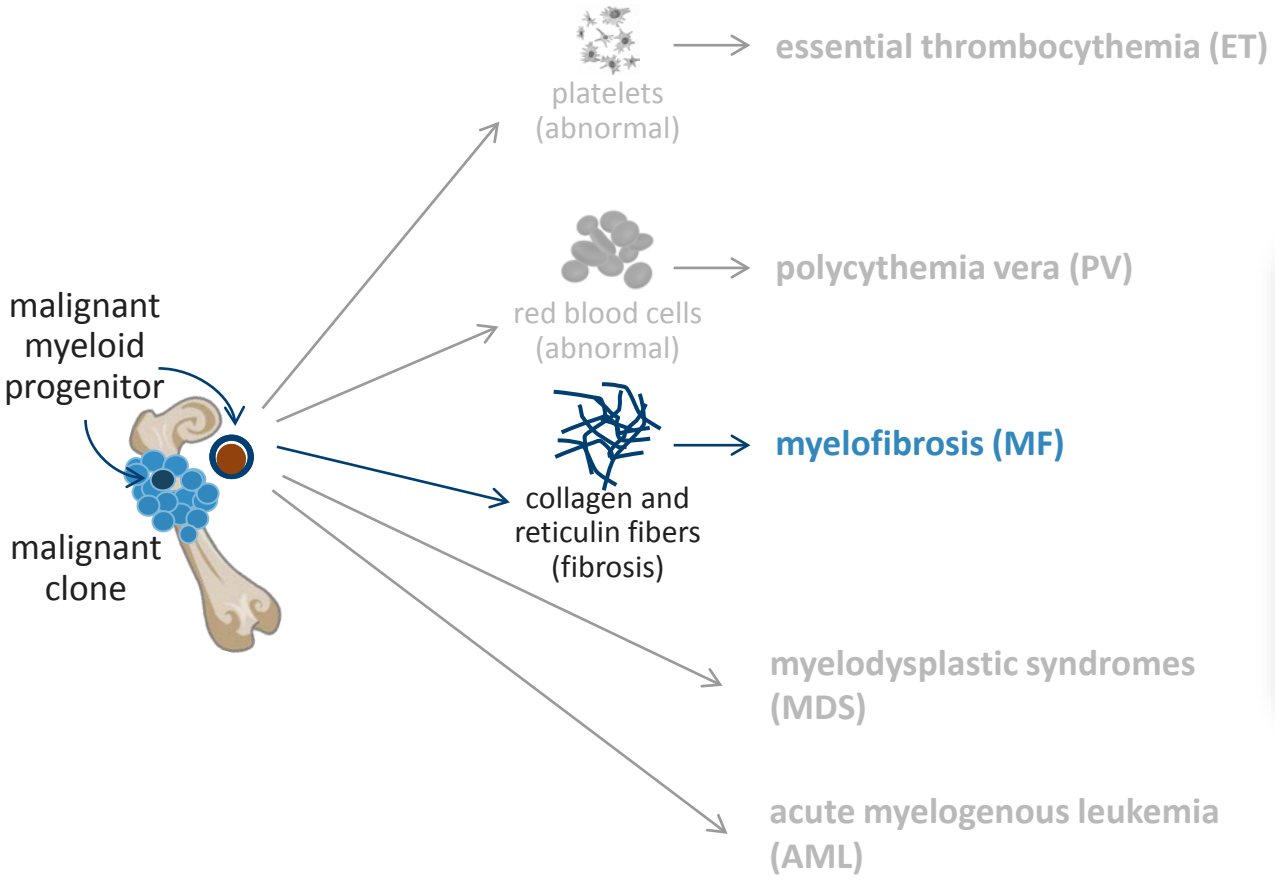
recent FDA action
related to Geron's imetelstat IND

- **Geron's IND for imetelstat placed on full clinical hold:**
  - patients in Phase 2 ET and MM trials cannot receive any further treatment with imetelstat
  - Geron cannot initiate a new clinical trial under its IND until hold is lifted or partially lifted
- **Safety issues cited by FDA as basis for full clinical hold on Geron's IND:**
  - lack of evidence of reversibility of hepatotoxicity
  - lack of adequate follow-up in patients who experienced hepatotoxicity
  - risk for chronic liver injury
- **Information required by the FDA:**
  - clinical follow-up in patients who experienced LFT abnormalities until resolved to normal or baseline
  - information regarding reversibility of the liver toxicity after chronic drug administration in animals

addressing the clinical hold
related to Geron's imetelstat IND

- **Clinical activities:**
  - amend Geron-sponsored clinical protocols, seek IRB approvals and obtain patient informed consent to allow for longer follow-up after imetelstat was discontinued to collect LFT and other relevant information
  - compile and analyze LFT data from trials
- **Nonclinical activities:**
  - nonclinical toxicity studies of chronic imetelstat administration were previously conducted in mice and cynomolgus monkeys
    - no clinical or anatomical pathology changes indicative of hepatocellular injury observed
    - no clear signal of biochemical LFT abnormalities identified
  - conduct further expert assessment of liver findings in prior nonclinical chronic toxicity studies

focus on myelofibrosis
disease with greater unmet medical need



- ~3,000 cases diagnosed per year in the US
- ~13,000 people in the US living with MF
- drug therapies include: ruxolitinib, hydroxyurea
- median survival: ~1-3 years for intermediate-2 or high risk disease (60-70%)

Mehta et al, Leuk Lymphoma 2013, Jul (epub); Gangat et al, J Clin Oncol 2011, 29:392-397

investigator-sponsored single center
initial study of imetelstat in myelofibrosis

Principal Investigator & Study/IND Sponsor:
Ayalew Tefferi, MD – Mayo Clinic, Rochester

High risk or intermediate-2 (DIPSS Plus)

Primary or secondary (post-PV or post-ET) myelofibrosis

→

Single Agent Imetelstat
2hr i.v. infusion

Cohort A:
9.4 mg/kg
q3 weeks*

Cohort B:
9.4 mg/kg weekly cycle 1, then q3 weeks*

* Dose reductions and dose holds allowed for toxicity

→

1° Endpoint:

- Overall response rate (CR, PR or CI) per IWG criteria

2° Endpoints:

- Spleen response
- Anemia response
- Safety/tolerability

potential for differentiation

addressing the underlying malignant process

2013 IWG criteria for response in myelofibrosis[1]

		JAK inhibitors
CR: complete remission	• normal cellularity and reversal of bone marrow fibrosis ***and*** • normal peripheral blood counts and smears ***and*** • complete resolution of symptoms and splenomegaly	☐
PR: partial remission	• same as CR without bone marrow response ***or*** • same as CR with bone marrow response but without full recovery of peripheral blood counts	☐
CI: clinical improvement	• anemia, spleen ***or*** symptoms response ***and*** • no progressive disease or increase in severity of anemia, thrombocytopenia or neutropenia	☑
spleen response / **anemia response** / **symptoms response**	• improvements in splenomegaly, anemia ***or*** symptoms • stabilization of the other criteria ***not*** required	☑

Duration must be ≥12 weeks to qualify as a response under any category

[1]Tefferi, A et al. Revised response criteria for myelofibrosis: International Working Group-Myeloproliferative neoplasms Research and Treatment (IWG-MRT) and European LeukemiaNet (ELN) consensus report. Blood 122: 1395-1398, 2013

preliminary efficacy data suggest differentiated activity in MF

	Arm A (n = 11)	Arm B (n = 11)	Total (n = 22)
Best Response by 2013 IWG criteria	N (%)	N (%)	N (%)
Overall Response (CR+PR+CI)	3 (27.3%)	6 (54.5%)	9 (40.9%)
Remission (CR+PR)	**2 (18.2%)**	**3 (27.3%)**	**5 (22.7%)**
Complete Remission (CR)	2 (18.2%)[1]	1 (9.1%)	3 (13.6%)
Partial Remission (PR)		2 (18.2%)	2 (9.1%)
Clinical Improvement (CI)	1 (9.1%)	3 (27.3%)[2]	4 (18.2%)

Pending 12-week durability assessment (as of Oct 2013):

[1]One patient who met the PR criteria on 4/30/2013 and converted to CR on 10/9/2013 (Arm A)

[2]One patient who met CI-by Liver Response on 10/14/2013 (Arm B)

- Median time to onset of CR or PR was 2.8 months (range 1.4 – 3.0)

remissions observed in preliminary data suggest disease-modifying activity in MF

all manifestations of disease must be addressed in patients to achieve a remission

remission

clinical improvement

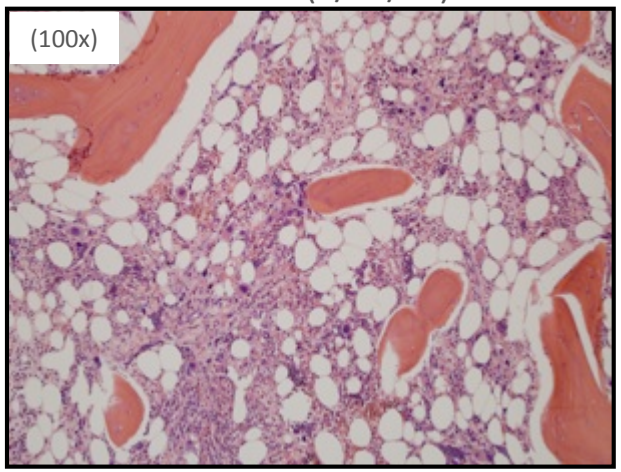
Patient number	1	2	3	4	5
Best response per IWG criteria	**CR**	**CR**	**CR**	**PR**	**PR**
Normal cellularity and reversal of bone marrow fibrosis	✓	✓	✓	✓	x
Normal peripheral blood counts and smears	✓	✓	✓	x	✓
Anemia response or transfusion independence	✓	✓	—	✓	—
Complete resolution of splenomegaly (by palpation)	✓	✓	✓	—	✓
Complete resolution of symptoms	—	✓	✓	—	✓

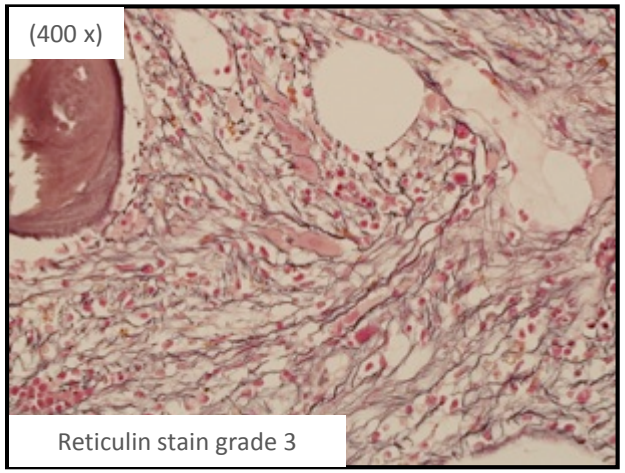
— = disease manifestation not present at baseline

Geron's analysis of Myelofibrosis IST preliminary efficacy data as of Oct 2013 from first 22 patients enrolled presented at Geron Investor & Analyst Event Dec 2013

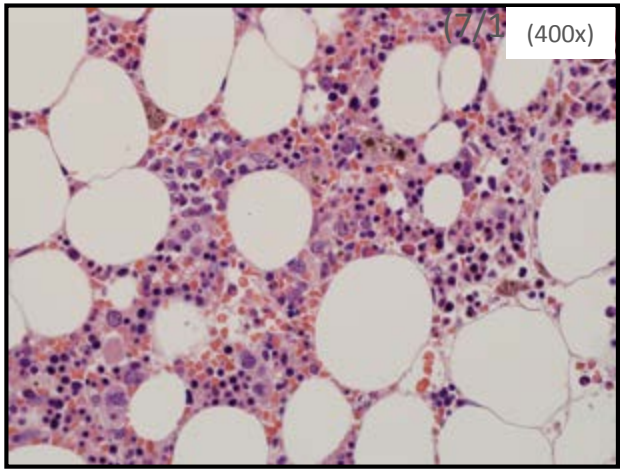
patient 2 (prior Jak inhibitor): bone marrow complete remission on imetelstat

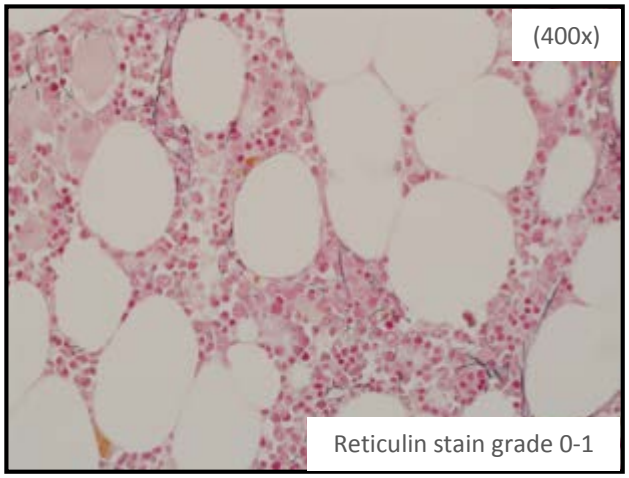
Baseline (1/28/13)





5.5-months post imetelstat therapy





Preliminary data presented at the 2013 ASH Annual Meeting Abstract #662 (Tefferi A, et al.)

preliminary efficacy data suggest potential for broad clinical benefit

multiple disease manifestations affected

Secondary Endpoints	Arm A	Arm B	Total
Spleen Response (by palpation)	2/7 (28.6%)	3/6 (50%)	5/13 (38.5%)
Anemia Response	2/5 (40%)	1/7 (14.3%)	3/12 (25%)
Exploratory Endpoints	**Arm A**	**Arm B**	**Total**
Resolution of circulating blasts	6/6 (100%)	5/8 (62.5%)	11/14 (78.6%)
Normalization of leukocytosis	3/7 (42.9%)	4/8 (50%)	7/15 (46.7%)
Normalization of thrombocytosis	2/3 (66.7%)	5/6 (83.3%)	7/9 (77.8%)

- Symptoms response was observed in 10/13 (77%) patients

Definitions:

Spleen response: *either* ≥ 50% decrease if baseline ≥ 10 cm *or* becoming non-palpable if baseline 5 to < 10 cm measured by physical examination (palpable distance from the left costal margin)

Anemia response: *either* becoming transfusion independent if dependent at baseline *or* gaining ≥ 2 g/dL in hemoglobin level if transfusion-independent but with a hemoglobin level < 10 g/dL at baseline

Symptoms response: investigator-assessed 50% reduction from baseline in grade

Geron's analysis of Myelofibrosis IST preliminary efficacy data as of Oct 2013 from first 22 patients enrolled presented at Geron Investor & Analyst Event Dec 2013

preliminary safety data in MF
myelosuppression is dose-limiting toxicity

Treatment-related hematologic toxicity of imetelstat among the first 33 patients enrolled with high or intermediate-2 risk myelofibrosis

Myelosuppression	Arm A (n=19)	Arm B (n=14)	All patients (n=33)
Grade 3/4 neutropenia	2 (11%)	5 (36%)	7 (21%)
Grade 3/4 thrombocytopenia	5 (26%)	5 (36%)	10 (30%)
Grade 3/4 anemia	1 (5%)	3 (21%)	4 (12%)
Grade 4 neutropenia	**1 (5%)**	**3 (21%)**	4 (12%)
Grade 4 thrombocytopenia	**0**	**4 (29%)**	4 (12%)
Grade 5 (death) CNS bleed and febrile neutropenia	**0**	**1 (7%)**	1 (3%)

- **Arm A** schedule adequately managed through dose hold rules and dose modifications
- **Arm B** schedule not sufficiently tolerable for further development

Preliminary safety data from first 33 patients enrolled in the Myelofibrosis IST presented at the 2013 ASH Annual Meeting Abstract #662 (Tefferi A, et al.)

preliminary safety data in MF
non-hematologic adverse events not dose-limiting

Treatment-related non-hematologic toxicity of imetelstat among the first 33 patients enrolled with high or intermediate-2 risk myelofibrosis

	All patients (n=33)
Grade 1 nausea	5 (15%)
Grade 1 vomiting	1 (3%)
Grade 1/2 fatigue	4 (12%)
Grade 2 hyperbilirubinemia	2 (6%)
Grade 2 APTT* increase	1 (3%)

*activated partial thromboplastin time

Preliminary safety data from first 33 patients enrolled in the Myelofibrosis IST presented at the 2013 ASH Annual Meeting Abstract #662 (Tefferi A, et al.)

recent FDA action
related to Dr. Tefferi's myelofibrosis IND

- **Dr. Tefferi's myelofibrosis IND for imetelstat placed on partial clinical hold:**
  - previously enrolled patients (with MF, MDS RARS and blast-phase MF) deriving clinical benefit may continue treatment with imetelstat
- **Safety issues cited by FDA as basis for partial clinical hold on Dr. Tefferi's myelofibrosis IND:**
  - safety signal of hepatotoxicity identified in clinical trials of imetelstat
  - not known if this hepatotoxicity is reversible
- **Information required by the FDA:**
  - follow-up LFT information for all patients in the Myelofibrosis IST
    - if LFTs normal, follow-up information for 30 days
    - if LFTs abnormal, follow-up until resolved to normal or baseline
- **Dr. Tefferi's activities to address his clinical hold:**
  - compile and analyze LFT data

candidate indications
among hematologic myeloid malignancies

- **If the full clinical hold on Geron's IND is lifted, or partially lifted:** expect to pursue development of imetelstat in MF and potentially one or more indications where there is a greater unmet medical need than ET

myelodysplastic syndromes (MDS)[1]

- ~12,000 cases diagnosed per year in the US
- up to ~60,000 people in the US living with MDS
- drug therapies include: hypomethylating agents, IMiDs, ATG, cyclosporine
- median survival: ~1-3 years for intermediate or high risk disease

acute myelogenous leukemia (AML)[2]

- ~13,000 cases diagnosed per year in the US
- ~37,000 people in the US living with or in remission from AML
- drug therapies include: cytotoxic agents
- poor prognosis following relapse from initial remission
- ~25% of patients diagnosed are alive after 5 years

[1] Sekeres, J Natl Compr Canc Netw 2011; 9:57-63
Malcovati et al, J Clin Oncol 2007; 25:3503-3510

[2] NCI SEER database: www.seer.cancer.gov

supporting imetelstat development
in hematologic myeloid malignancies

Activities to seek release of full clinical hold:

- compile and submit preclinical and clinical data and information to FDA
- maintain focus on development plan in diseases with high unmet need

Updated Myelofibrosis IST efficacy and safety data expected in 2014:

- previously enrolled patients in Myelofibrosis IST deriving clinical benefit may continue treatment with imetelstat
- additional and updated data expected at ASH annual meeting in December 2014, including MDS RARS and blast-phase MF patients

Balance sheet:

- ~$154 million in cash an investments at March 31, 2014
- cash operating expenses of ~$35-40 million expected in 2014 (assumes potential initiation of Geron-sponsored Phase 2 clinical trial of imetelstat in patients with MF in Q1 2015)

Asset ownership & IP:

- proprietary compound developed by Geron, U.S. patent protection through 2025

Partnering:

- may be explored to enable a more comprehensive development plan

thank you

geron

For further information, please contact:
Anna Krassowska, Ph.D., Investor Relations
+1.650.566.7127 or investor@geron.com