ONCONOVA THERAPEUTICS

February 7th 2019 | Nasdaq: ONTX
KOL Breakfast

FORWARD LOOKING STATEMENTS

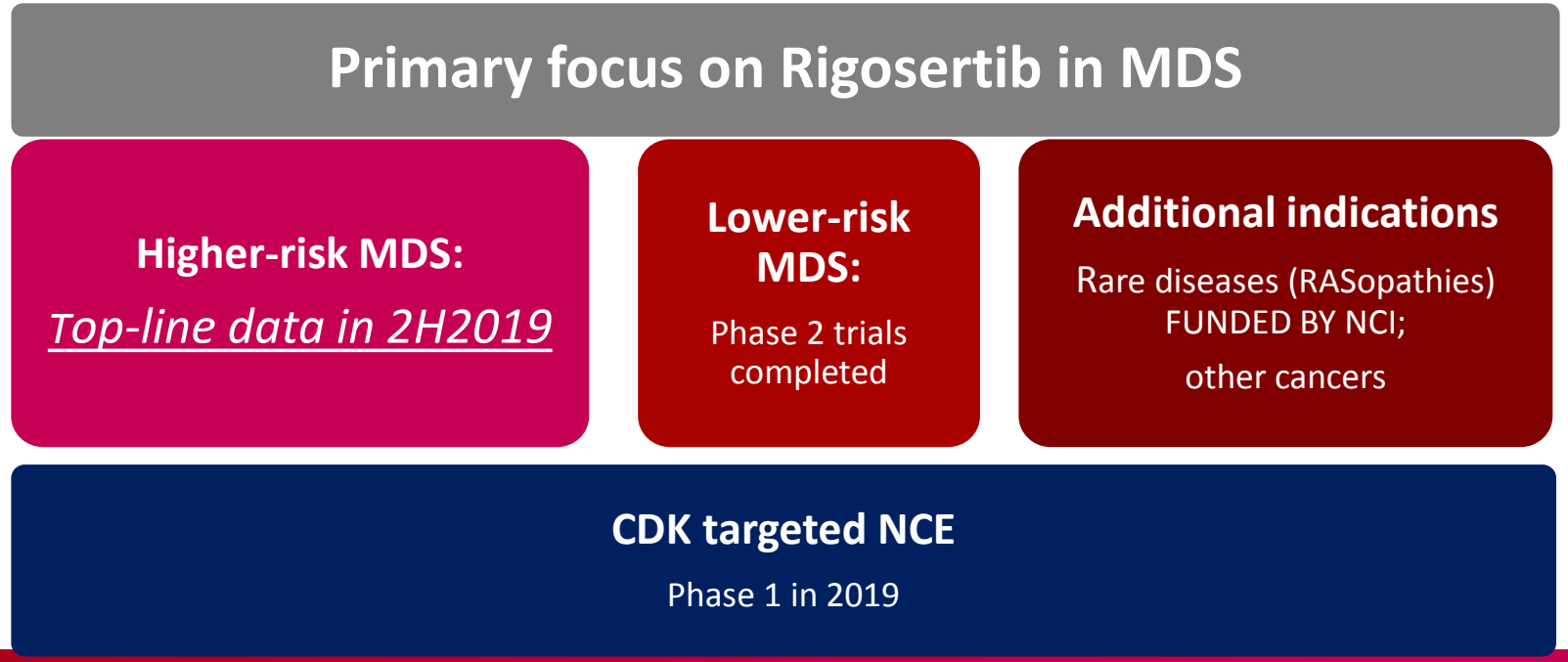
This presentation contains forward-looking statements about Onconova Therapeutics, Inc. based on management's current expectations which are subject to known and unknown uncertainties and risks. Onconova has attempted to identify forward-looking statements by terminology including "believes," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "should," "approximately" or other words that convey uncertainty of future events or outcomes. This presentation assumes the Company raises capital for disclosed product development plans. Our actual results could differ materially from those discussed due to a number of factors, including, but not limited to, our ability to raise additional financing on favorable terms, the success of our clinical trials and our ability to obtain regulatory approvals and other risk factors outlined in our annual and quarterly reports filed with the Securities and Exchange Commission. We are providing this information as of the date of this presentation and do not undertake any obligation to update any forward-looking statements, whether written or oral, that may be made from time to time, as a result of new information, future events or otherwise except as required by law.

MANAGEMENT TEAM

	Steven M. Fruchtman, M.D. *President & CEO*	Novartis, Janssen, Syndax, Allos Therapeutics, Spectrum Pharmaceuticals, Mount Sinai
	Richard Woodman, M.D. *Chief Medical Officer*	Novartis, USCDMA, Johnson & Johnson/Ortho Biotech Products, Univ of Calgary, Scripps Clinic & Research Institute
	Mark Guerin *Chief Financial Officer*	Barrier Therapeutics, Cardiokine, PricewaterhouseCoopers
	Manoj Maniar, Ph.D. *Sr., VP, Product Development*	Alcon, SRI
	Avi Oler, JD, MBA *Head of Corporate Development and General Counsel*	Spectrum Pharmaceuticals, Kirkland & Ellis, Center for Financial Research & Analysis, Lehman Brothers

ONCONOVA THERAPEUTICS, INC.

- IPO in 2013 (Nasdaq: ONTX)
- Phase 3 Company with top-line data in HR-MDS anticipated 2H19
  - Promising survival signal at prospectively planned Interim Analysis
  - Rigosertib partnered in Japan / Korea and Latin America
  - Additional partnerships anticipated in available territories



MANAGEMENT FOCUS 2019

Priorities

- **Complete INSPIRE accrual 2H19**
- **Complete business development transactions**

Other Goals

- Finalize SPA agreement with FDA for combination pivotal trial
  - Seeking Collaboration to Initiate Future Planned Trial
- Complete Rasopathy PDX models and initiate a Ph 1 clinical trial in Ras driven pediatric cancers in collaboration with NCI
- Initiate rigosertib study in KRAS + NSCLC
- Submit IND to FDA for ON123300

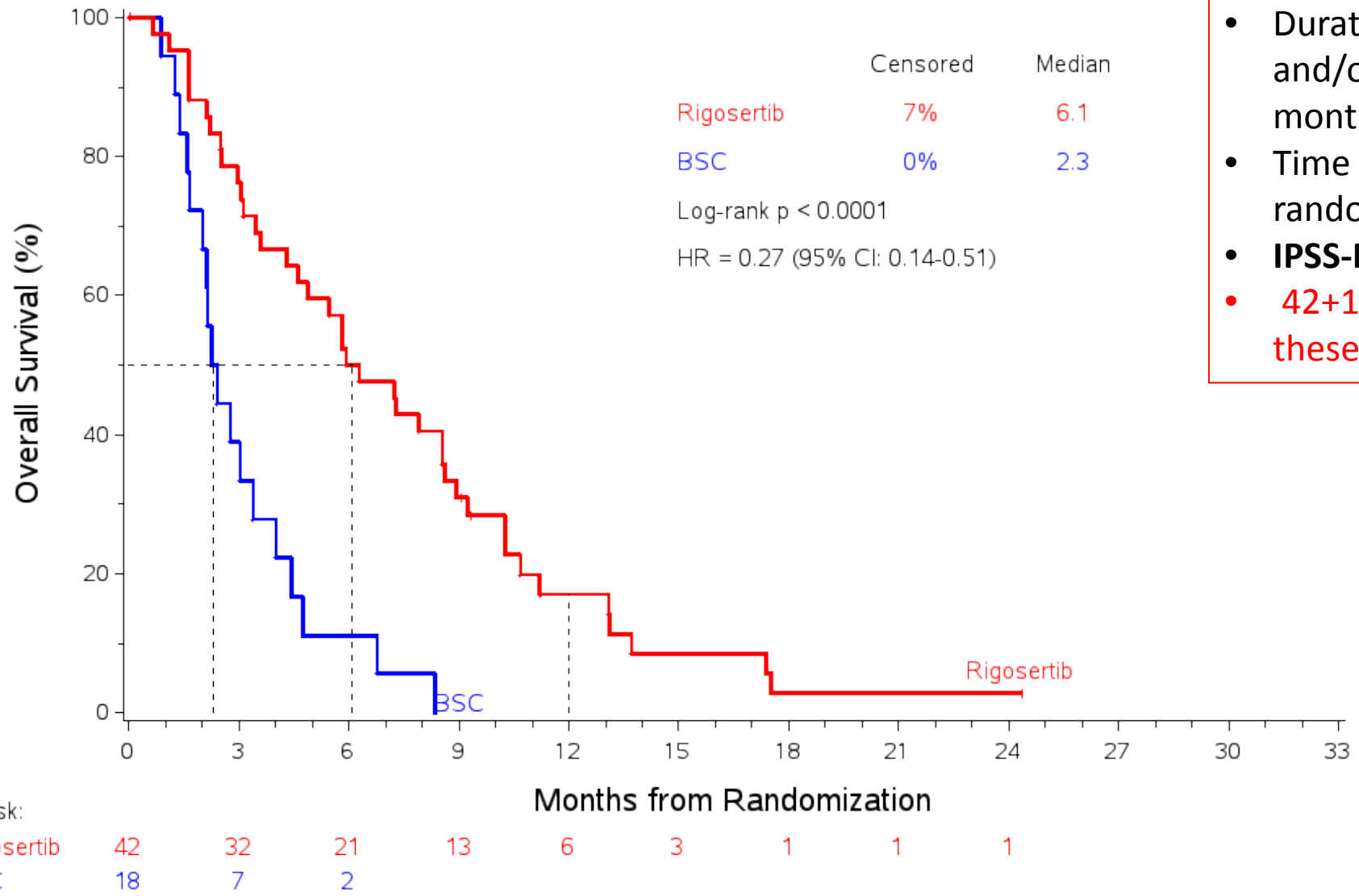
INSPIRE: DEVELOPMENT TIME-LINES & OBSERVATIONS

INSPIRE	Total patients	Full enrollment	Events needed	Proportion of VHR	Top-line data	NDA filing	Approval*
Post Interim	360 (90 power)	H2-2019	288	>70% (observed)	H2-2019	H1-2020	2020

- High proportion of VHR subgroup on current INSPIRE Trial has favorable implications
  - >40% seen on ONTIME Trial; >70% seen at interim analysis on INSPIRE
  - Validates the trial design and strict patient eligibility criteria – *failure to respond or progress within 9 cycles of AZA*
  - VHR subgroup had significant OS advantage on ONTIME
- Median overall survival of INSPIRE
  - Control group survival could be <4 months due to higher VHR population
  - May hasten timeline to pivotal data for requirement of 288 events
- INSPIRE directed to the great unmet medical need in MDS- no approved drug in this space
  - Currently no other program is in advanced pivotal trial
  - Target HR 0.67 for ITT patient population for improvement in OS

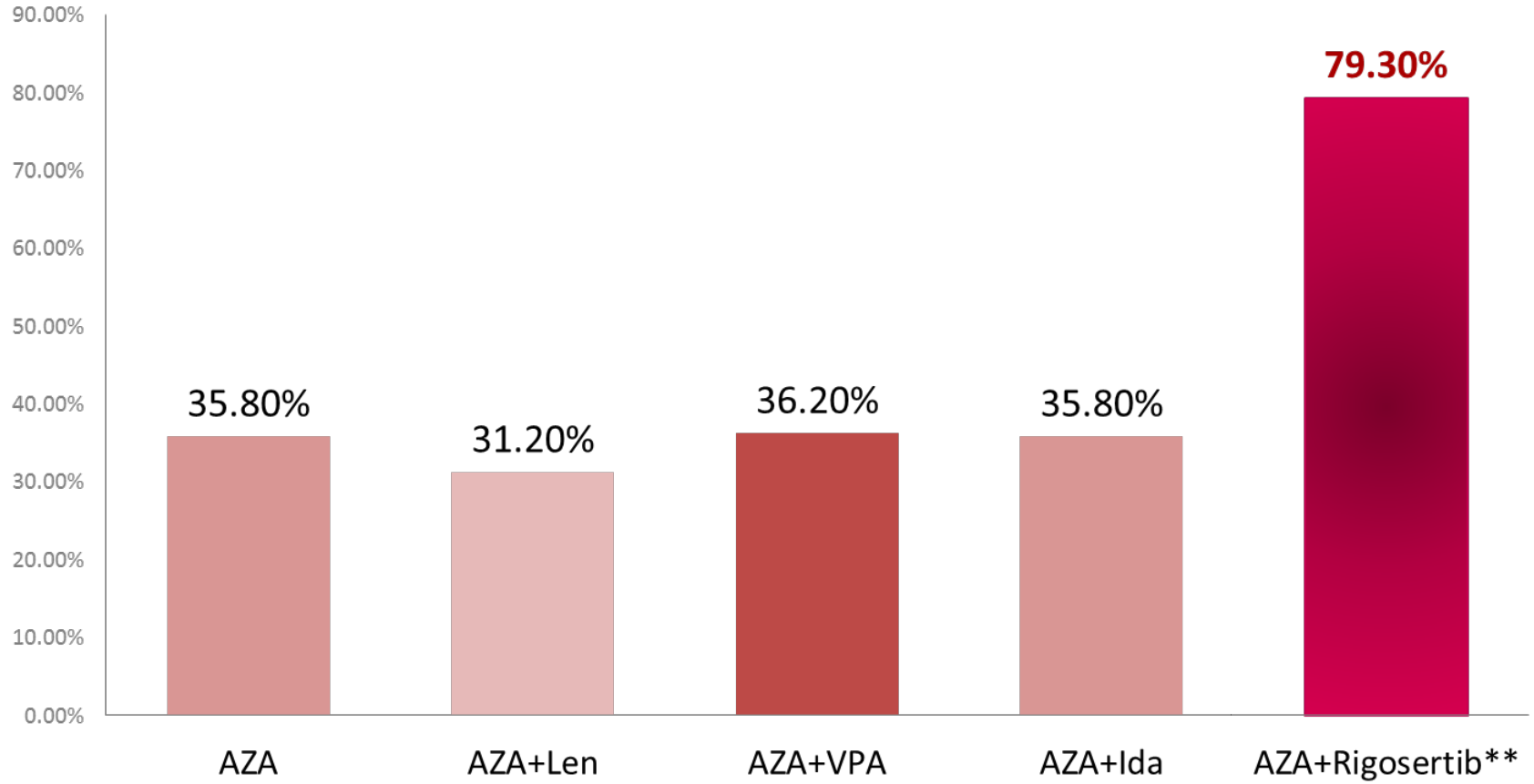
** Fast-track assumed with orphan designation*

VHR SUBGROUP ANALYSIS FROM ONTIME-ELIGIBLE FOR INSPIRE



- Age < 82 years
- Duration of prior HMA ≤ 9 months and/or ≤ 9 cycles of prior HMA in ≤ 12 months
- Time from last dose of prior HMA to random assignment ≤ 6 months.
- **IPSS-R Very high risk category**
- 42+18 = 60 patients who satisfied these criteria.

COMBINATION OF ORAL RIGOSERTIB AND STANDARD DOSE AZACYTIDINE: VARIOUS DOUBLET RESPONSE RATES (CR/PR/MCR*) PATIENTS RECEIVED A MEDIAN OF 7 CYCLES



Note: these are not head-to-head studies from which inferences or comparisons can be drawn, but rather serve as part of the basis for company's further investigation

*Lionel Adès et al: ASH; 2018

**Navada et al: ASH; 2018 Median Duration of Treatment is 7.8 months (0.7-25.1)

COMBINATION THERAPY: NEXT STEPS AND TIMELINES

Step	Start	Complete	Remarks
Phase 2 expansion *Fully enrolled*	Q1-2017	Q2-2018	▪ Dose and schedule of 1120 mg daily dose explored presented at ASH 2018*
Phase 3 protocol	Q1-2018	Q4-2018	▪ Protocol and SPA submitted for FDA approval in Dec 2018
SPA Review by FDA Decision by FDA	Q1-2019	Q1-2019	▪ 01-Feb-19 – Start of 45 calendar day review period by FDA ▪ Mid Mar-19 – Approval or Non-approval Letter of SPA by FDA *(Note: 45 day review period may take longer if FDA decides to include external advisors into review process)*
Phase 3 trial	2019	2022	▪ Rapid enrollment expected ▪ Response endpoint can be achieved in <6-9 months after patient is enrolled

**Dose justification based on oral rigosertib optimal transfusion independence rate data in Lower-Risk MDS (ASH 2017)*

“We all know that light travels faster than sound. That’s why certain people appear bright until you hear them speak”.

- Albert Einstein

- Dr Einstein never met Drs Lewis Silverman and Rajwanth Veluswamy!!!

Thank you for attending !