ATEA Pharmaceuticals

Jefferies Healthcare Conference

June 8, 2022

NASDAQ: AVIR

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Industry Information

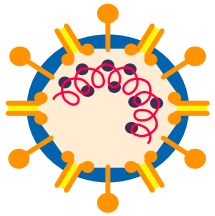
Market data and industry information used throughout this presentation are based on management's knowledge of the industry and the good faith estimates of management. We also relied, to the extent available, upon management's review of independent industry surveys and publications and other publicly available information prepared by a number of third-party sources. All of the market data and industry information used in this presentation involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Although we believe that these sources are reliable, we cannot guarantee the accuracy or completeness of this information, and we have not independently verified this information. While we believe the estimated market position, market opportunity and market size information included in this presentation are generally reliable, such information, which is derived in part from management's estimates and beliefs, is inherently uncertain and imprecise. No representations or warranties are made by the Company or any of its affiliates as to the accuracy of any such statements or projections. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described above. These and other factors could cause results to differ materially from those expressed in our estimates and beliefs and in the estimates prepared by independent parties.

Atea's Oral Drug Discovery Platform has Potential to Transform Treatment of Severe Viral Diseases

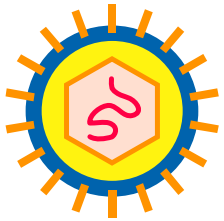
A platform of proprietary purine nucleos(t)ide prodrugs designed specifically to target viral RNA polymerase

Small molecule drugs are well suited for monotherapy and combination regimens

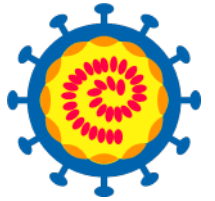
Treatment of many RNA viral diseases require combination regimens to prevent drug resistance



Coronaviridae
SARS-CoV-2 and Future Coronaviruses



Flaviviridae
HCV, Dengue



Paramyxoviridae
RSV, hMPV

Atea's Goal: Discover Breakthrough Drugs Against Severe RNA Viruses

Proprietary Platform Generates Deep Antiviral Pipeline

ssRNA VIRUS	THERAPEUTIC INDICATION		PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
Coronaviridae	COVID-19[1]	Bemnifosbuvir (AT-527) Nucleotide*				
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	Hepatitis C Virus (HCV)	Ruzasvir** (NS5A inhibitor)				
	Dengue Virus	AT-752 Nucleotide				
Paramyxoviridae	Respiratory Syncytial Virus (RSV)	Product Candidates				

2022 EXPECTED MILESTONES

COVID-19

- Advance bemnifosbuvir clinical program in 2022

HCV

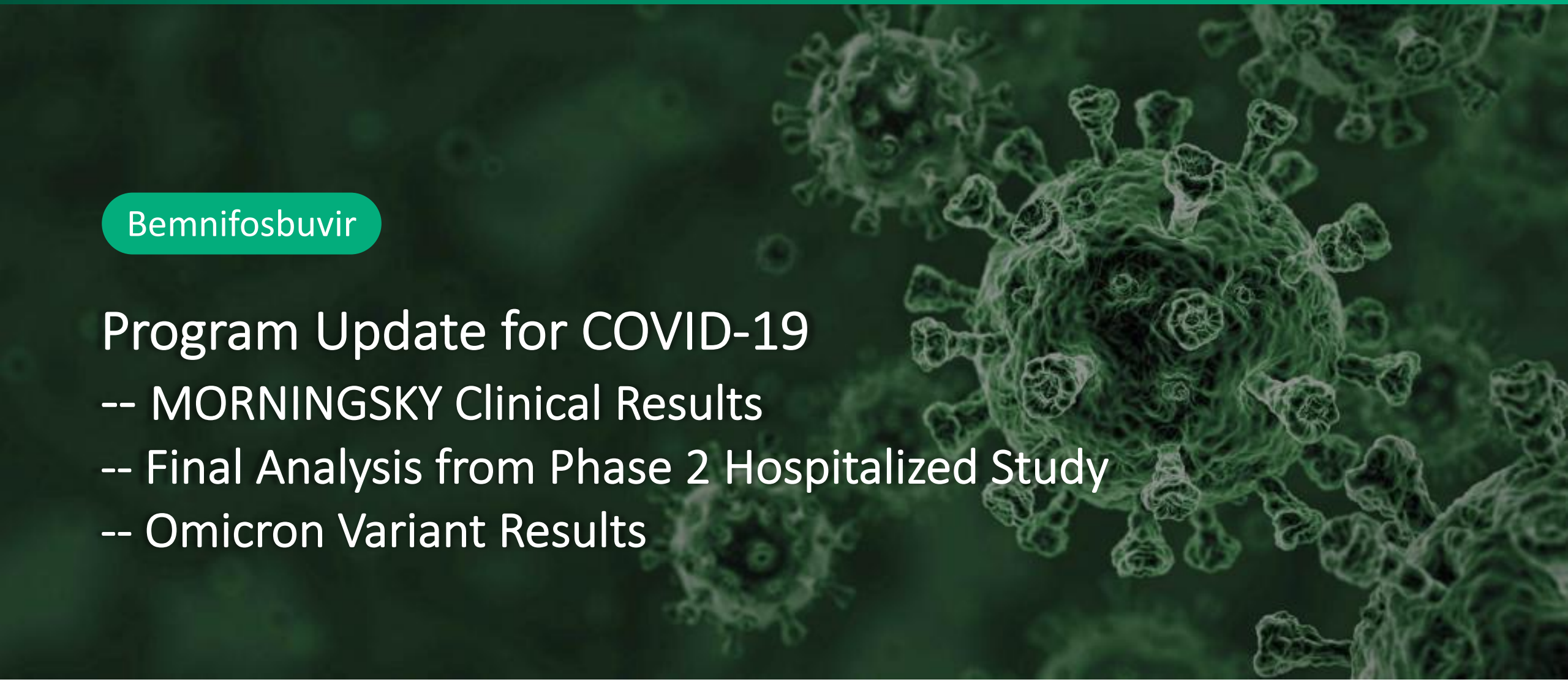
- Initiate bemnifosbuvir + Ruzasvir Phase 2 combo trial: **late 2022**

Dengue

- Phase 2 proof-of-concept program: **initial data late 2022**

*Bemnifosbuvir is a double prodrug nucleotide analog. ** Worldwide exclusive license for all uses from Merck. Bemnifosbuvir is the generic name for AT-527.

1. Bemnifosbuvir as monotherapy has generated Phase 2 results. I*n vitro* combination studies are being conducted to generate data in support of clinical combination studies for COVID-19. 2. Bemnifosbuvir and Ruzasvir have generated Phase 2 results and are anticipated to be developed as a combination for HCV.



Bemnifosbuvir

Program Update for COVID-19

-- MORNINGSKY Clinical Results

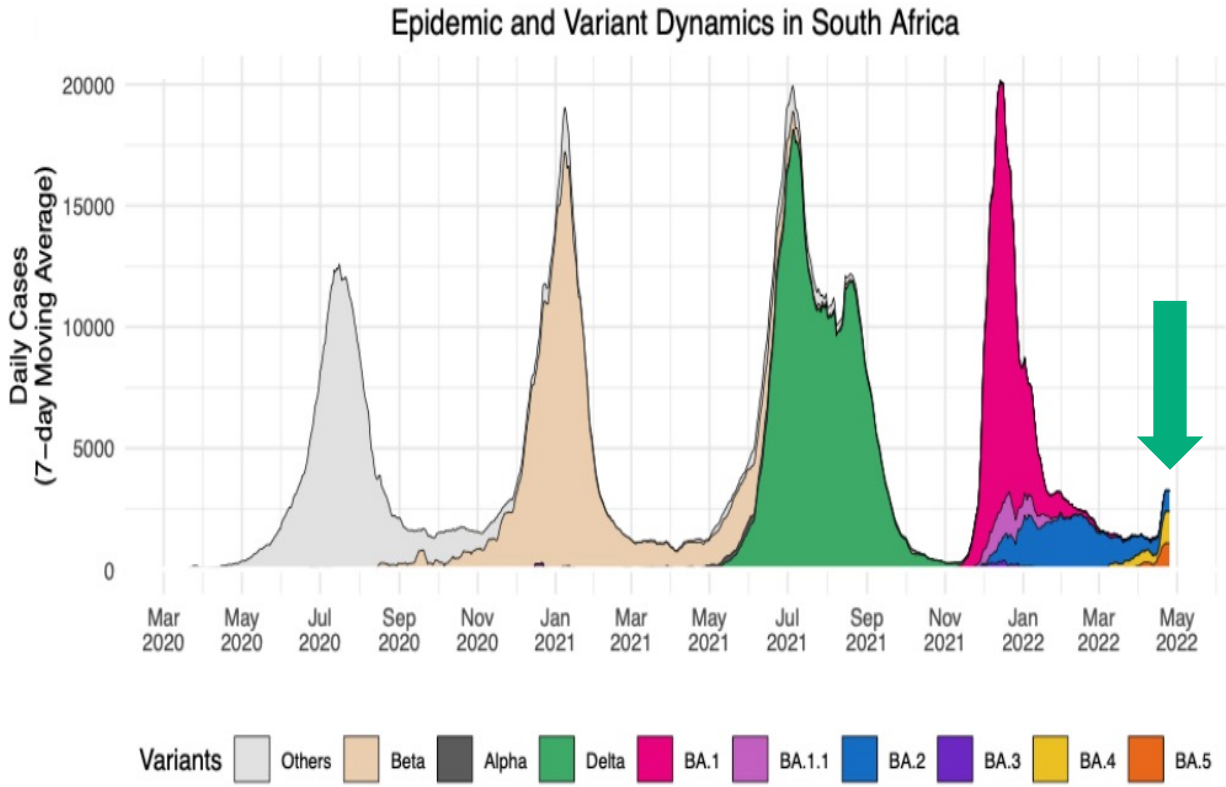
-- Final Analysis from Phase 2 Hospitalized Study

-- Omicron Variant Results

COVID-19: Continued Emergence and Evolution of Variants

- ***New oral antivirals needed with improved profiles due to current treatment limitations***
  - Relapse, drug-drug interactions, potential safety, efficacy and resistance concerns
- New variants fuel surges and are life threatening to those at high risk and have caused severe illness and mortality to 65+
- BA.4 and BA.5 expected to fuel surges in US during the fall / winter 2022-2023

Continued Emergence and Evolution of Omicron in South Africa, New BA.4 and BA.5 Lineage

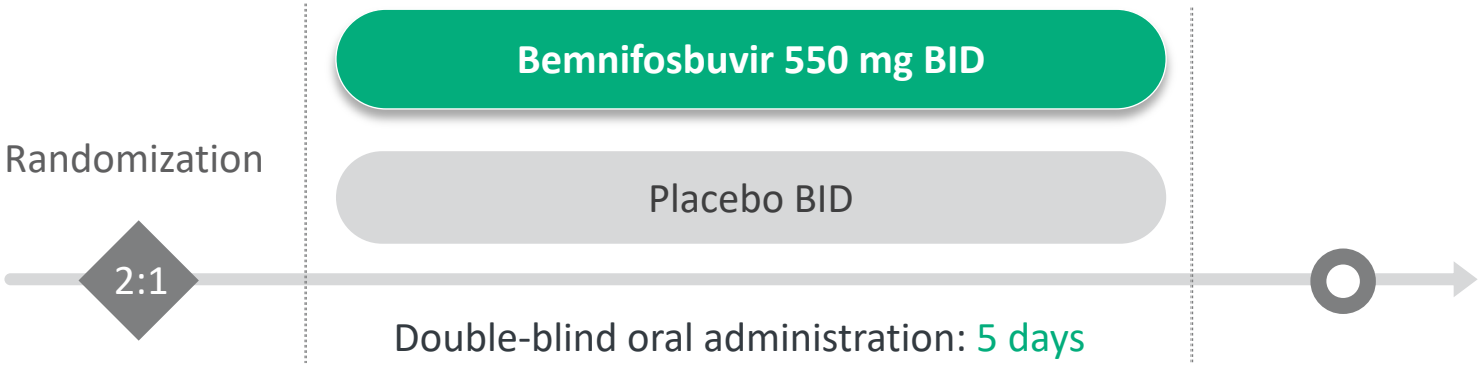


Data in preprint in MedRxIV, *Continued Emergence and Evolution of Omicron in South Africa: New BA.4 and BA.5 Lineage, Tulio de Oliver*ia et all

Bemnifosbuvir (AT-527) Global Phase 3 MORNINGSKY Trial

Outpatient Setting, Mild to Moderate COVID-19 Patients With or Without Risk Factors

Inclusion Criteria: Patients eligible for management in an outpatient setting, ≤ 5 days of symptoms
N=~1400 planned



Objectives:

- Primary
- Time to alleviation or improvement of COVID-19 symptoms
- Secondary
- Hospitalization
- Death
- Virological endpoints

Status:

- ***Study enrolled 216 patients and closed out early with 207 efficacy evaluable patients***

MORNINGSKY Topline Clinical Efficacy Results (n=207 Efficacy Evaluable)

- Global and broad patient population studied
  - Approximately 50% high risk / 50% standard risk
  - 28% vaccinated
  - 56% seropositive at baseline
- Primary endpoint of time to alleviation / improvement of symptoms not achieved
- **71% reduction of hospitalization** bemnifosbuvir vs placebo (secondary endpoint) and no deaths
  - Hospitalization and death have been the highly favored endpoints by regulatory agencies, including FDA
- Bemnifosbuvir was generally safe and well tolerated at 550 mg BID
  - No drug related SAEs
  - AEs leading to treatment discontinuation were 3% for bemnifosbuvir vs. 7% for placebo
  - No GI-related events leading to treatment discontinuation

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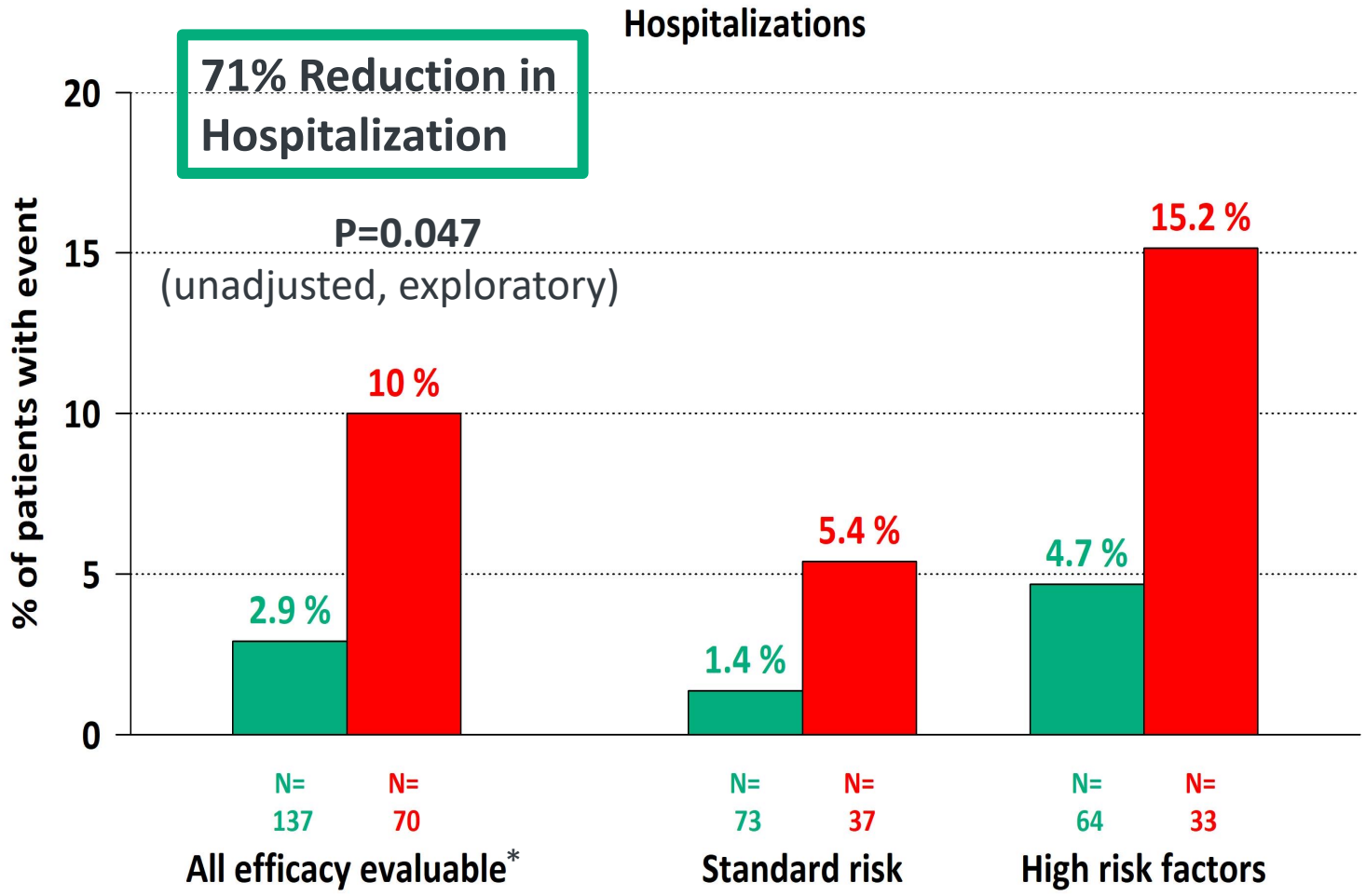
MORNINGSKY Results: 71% Reduction in Hospitalization for Bemnifosbuvir vs. Placebo (Secondary Endpoint; All Efficacy Evaluable)



- **82% reduction** in hospitalization in subgroup analyses in patients >40 yrs old for bemnifosbuvir vs. placebo
- No deaths were observed in study

Placebo

Bemnifosbuvir 550 mg BID

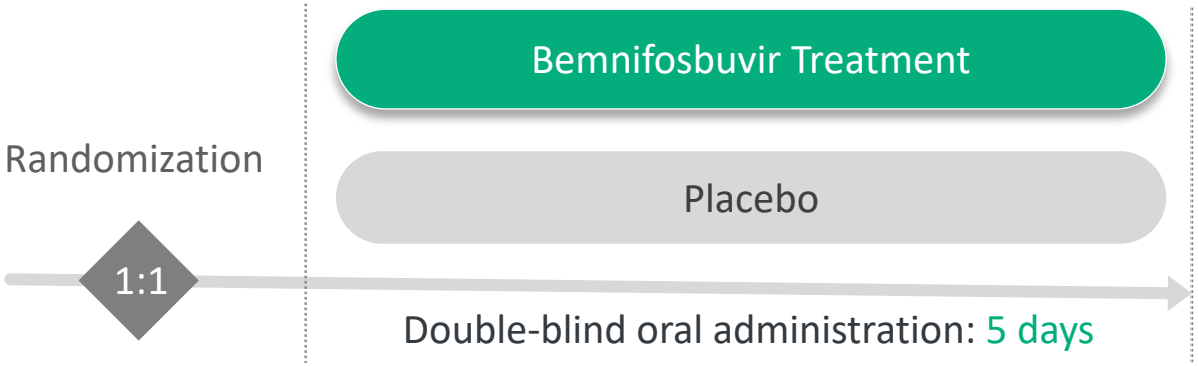
*Included patients who were randomized, received study drug and tested positive for SARS-CoV-2

Bemnifosbuvir Global Phase 2 Trial:

Hospitalized Patients with Risk Factors and Moderate COVID-19

Inclusion Criteria: adult patients (≥ 18 years old) with risk factors (obesity, diabetes, hypertension, asthma), **symptoms for ≤ 5 days** (hospitalized or confined)

Countries: Global Study



Objectives:

Primary:

- Reduction in progressive respiratory insufficiency

Secondary:

- Mortality
- Virological endpoints
- Safety and tolerability

Status:

- ***Study closed out early due to evolving management of COVID-19 of patients***
- ***Final analysis on 83 patients***
  - ***Part A: 41 patients in 550 mg BID arm; 40 patients in placebo arm***
  - ***Part B: 0 patients in 1100 mg BID arm; 2 patients in placebo arm***

Final Analysis from Phase 2 Hospitalized Study in High-Risk Patients

*Potential Clinical Benefits with Bemnifosbuvir Treatment (*550 mg BID)

- Low rates of progression to respiratory insufficiency (primary endpoint)
  - 7.3% with bemnifosbuvir treatment vs. 10% on placebo
    - Respiratory events associated with progression were less severe in the bemnifosbuvir treated patients as compared to those receiving placebo
- 0 deaths with bemnifosbuvir treatment vs 3 on placebo (secondary endpoint)
- Final virology results remained consistent with previously reported interim virology data (secondary endpoint)
- Bemnifosbuvir was generally safe and well tolerated with no drug related serious adverse events and no adverse events leading to treatment discontinuation

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AT-511 (free base of Bemnifosbuvir) Potent Against All SARS-CoV-2 Variants Tested *In Vitro*

Bemnifosbuvir's Unique Mechanism Provides Activity Across All Variants of Concern

Variant	Lineage	Strain	AT-511 EC_{90} Ratio Variants/Original
Original	A	hCoV-19/USA-WA1/2020	1
Alpha	B.1.1.7	hCoV-19/England/ 204820464/2020	2.9 (n=3)
Gamma	P.1	hCoV-19/Japan/TY7-503/2021	3.3 (n=3)
Epsilon	B.1.427	hCoV-19/USA/CA/ VRLC009/2021	1.0 (n=2)
Delta	B.1.617.2	hCoV-19/USA/PHC658/2021	1.1 (n=3)
Omicron	B.1.1.529	USA/MDHP20874/2021	1.1 (n=3)

For USA-WA-1, AT-511 EC_{90} = 0.53 ± 0.23 µM

Activities against different variants are within normal *in vitro* assay variations (~3-fold)

Next Steps for Bemnifosbuvir COVID-19 Clinical Development Program

Phase 3 MORNINGSKY Results Expected to Accelerate COVID-19 Program

- 207 efficacy evaluable patients from MORNINGSKY is in the range of a Phase 2 study
  - Additional Phase 2 monotherapy outpatient study is no longer planned
- Final analysis of Phase 2 hospitalized study in high-risk patients suggest potential clinical benefits and are consistent with results in MORNINGSKY trial
  - 0 deaths with bemnifosbuvir treatment vs. 3 deaths on placebo (secondary endpoint)
- Bemnifosbuvir 550 mg BID is efficacious, generally safe and well-tolerated with a favorable GI tolerability profile
- Pursuing regulatory interactions to review data package and next steps in clinical development program

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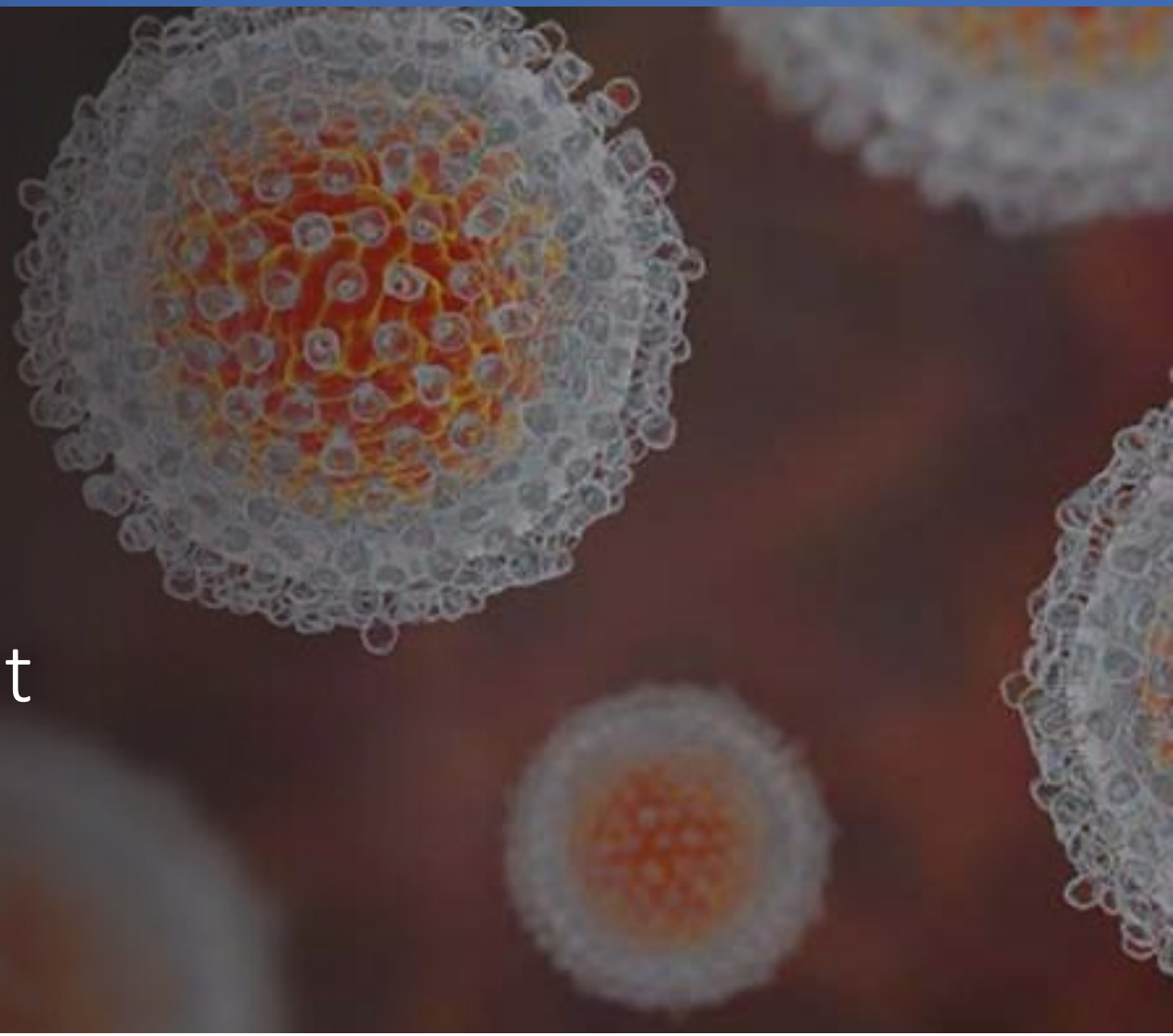
AT-752

Program Update: Phase 2 Clinical Development for Dengue



Dengue Fever: Significant Disease Burden and High Unmet Medical Need

Most Prevalent Mosquito-Borne Viral Disease

Significant Disease Burden

>100 Countries where dengue is endemic

~4B People live in high-risk areas*

~400M Estimated infected annually

12-44% Severe dengue mortality rate if left untreated

500,000 Cases develop into dengue hemorrhagic fever annually, requiring hospitalization (approx. 2.5% mortality rate)

$8-9B Global economic burden, annually[1]

AT-752: Promising Oral Product Profile

- Purine nucleotide prodrug with potent *in vitro* activity (EC_{90}~ 0.6 µM) against all serotypes tested
- MOA: inhibition of dengue viral polymerase
- Potent *in vivo* activity in a dengue animal model and no toxicity
- Successful development and FDA approval of AT-752 may result in US priority review voucher

No Antiviral Treatments Available

*More than 100 countries in Southeast Asia, Western Pacific, Eastern Mediterranean, Latin America and Puerto Rico; 2.3M in the Americas alone, causing ≥ 1, 200 deaths

[1]The global economic burden of dengue: a systematic analysis: *Donald S Shepard, Eduardo A Undurraga, Yara A Halasa, Jeffrey D Stanaway: Lancet Infect Dis* 2016; 16: 935–41 2. Takeda earnings presentation April 2021.

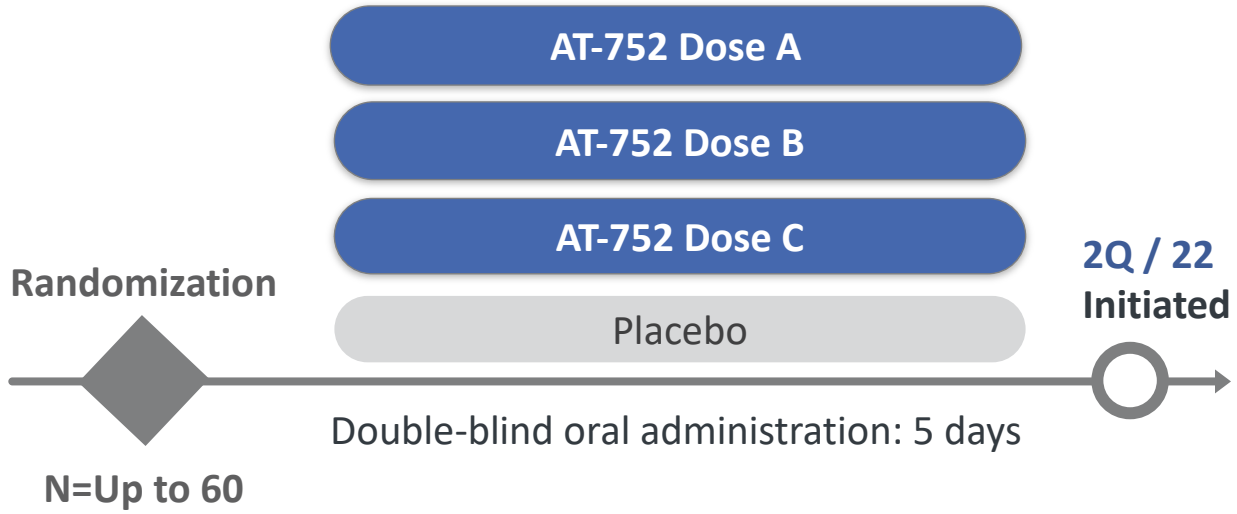
Initiated: AT-752 Phase 2 Global Proof-of-Concept Treatment for Dengue Study

Initial Results Expected Late 2022

Inclusion Criteria: adults with fever (≥38°C) within 48 hour of probable dengue infection and positive result on NS1 antigen test or RT-PCR assay
Location: Endemic Countries

Objectives: Antiviral activity, safety, pharmacokinetics (PK)

Primary endpoint: Change in dengue virus viral load from baseline



- Randomized, double-blind, placebo-controlled trial in adult patients with dengue fever
- **Objectives:** antiviral activity, safety, and PK
  - Primary endpoint: Change in dengue virus viral load from baseline
  - Exploratory: viremia, NS1 levels, fever
- **Population:** adults with fever (≥38°C) within 48 h with probable dengue infection and positive result on NS1 antigen test or RT-PCR assay

Initiated: AT-752 Human Challenge Infection Model

Results Expected Q4 2022

Population:
Healthy subjects, 18-55 years old

Location: US

Design:

- Day 1: 12 subjects randomized 3:1 administered oral AT-752 or matching placebo
- Day 2: Challenged with 0.5 mL DENV-1-LVHC (6.5×10^3 PFU/mL)

Endpoints:

- Mean quantitative viral load (peak, duration and AUC) by qRT-PCR until 28 days post virus inoculation
- Time to positive viral load by qRT-PCR

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Hepatitis C Program Update: Potential Best-in-Class Pan-Genotypic Regimen

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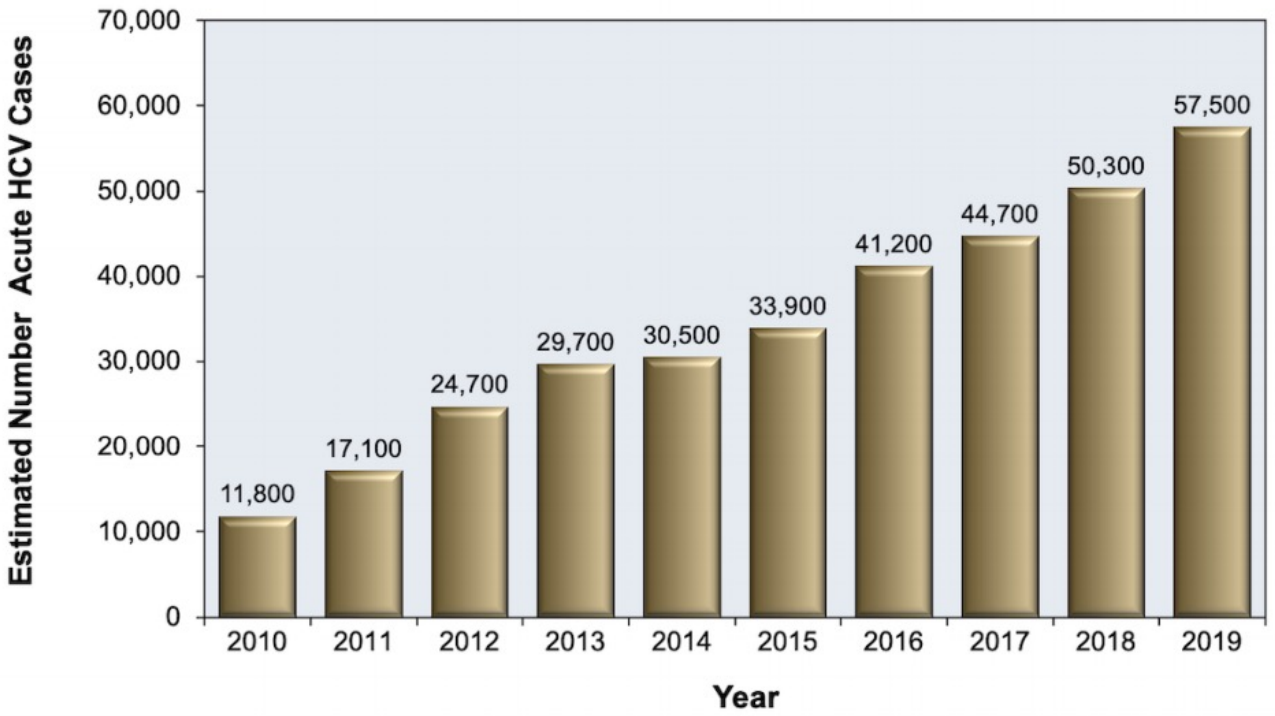
Fueled by the Opioid Crisis, US Hepatitis C Infections Continue to Increase

2021 Global HCV Market Approached $4 Billion; US ~50% of Global DAA Sales in 2021*

- HCV-related mortality incidence has increased even with effective DAA combinations
- Approx. 70% of long-term IV drug users have HCV in US
- Convenient 8 weeks or shorter treatments are needed for new wave of early/acute HCV infection
- Best-in-class combination has potential for > $1B
- US HCV market is concentrated with ~25% of roughly 16,000 prescribers accounting for 70% of TRxs



Source: Centers for Disease Control and Prevention (CDC). 2019 Viral Hepatitis Surveillance Report—Hepatitis C. Published May 2021.

*Source: Gilead 2021 Investor Report, AbbVie 2021 Investor Report

HCV Development for Bemnifosbuvir + Ruzasvir Update

Potential Best-in-Class Pan-genotypic Regimen

- **Currently manufacturing ruzasvir clinical trial supplies for Phase 2**
- **Evaluating clinical trial designs for the Phase 2 combination trial, which is expected to be initiated late 2022**
- **Phase 2 combination program expected to evaluate convenient and short treatment duration**

Bemnifosbuvir + Ruzasvir Competitive Profile

Convenient and Short duration

Potential for first RBV-free therapy for decompensated disease

- ✓ Bemnifosbuvir is the most potent nucleotide inhibitor to-date being developed for HCV
- ✓ Ruzasvir is a highly potent Phase 2-ready drug candidate
- ✓ Potential for best-in-class pan-genotypic fixed-dose combination

Good SS et al (2020) Preclinical evaluation of AT-527, a novel guanosine nucleotide prodrug with potent, pan-genotypic activity against hepatitis C virus. PLoS ONE 15(1): e0227104. https://doi.org/10.1371/journal.pone.0227104

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Closing Remarks

Fully Funded, Multiple Upcoming Value-Driving Milestones

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$705.5 million in cash and cash equivalents as of 3/31/22

Cash runway through 2025

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