UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **September 9, 2021**

Eagle Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**001-36306**	**20-8179278**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

50 Tice Boulevard, Suite 315 **Woodcliff Lake, NJ** (Address of principal executive offices)	**07677** (Zip Code)

Registrant's telephone number, including area code: **(201) 326-5300**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol**	**Name of each exchange on which registered**
Common Stock (par value $0.001 per share)	EGRX	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

On September 9, 2021, Eagle Pharmaceuticals, Inc., or the Company, released an investor presentation of the Company's CAL02 product. The investor presentation will be used from time to time in meetings with investors.

A copy of the above-referenced presentation is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference. The information furnished pursuant to Item 7.01 of this current report, including Exhibit 99.1, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities of that section, and shall not be deemed incorporated by reference into any of the Company's filings under the Securities Act of 1933, as amended or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing, except as shall be expressly set forth by specific reference in such filing. The furnishing of the information in this Current Report on Form 8-K is not intended to, and does not, constitute a determination or admission by the Company that the information in this Current Report on Form 8-K is material or complete, or that investors should consider this information before making an investment decision with respect to any security of the Company.

Item 9.01 Financial Statements and Exhibits.

Exhibit No.	Description
99.1	Presentation of the Company, dated September 9, 2021.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: September 9, 2021

EAGLE PHARMACEUTICALS, INC.

By: /s/ Scott Tarriff
Scott Tarriff
Chief Executive Officer

Exhibit 99.1

EAGLE PHARMACEUTICALS

CAL02 Investor Update

September 9, 2021

Forward-Looking Statements

This presentation contains forward-looking information within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, and other securities laws. Forward-looking statements are statements that are not historical facts. Words and phrases such as "anticipated," "forward," "will," "would," "may," "remain," "potential," "prepare," "expected," "believe," "plan," "near future," "belief," "guidance," and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to, statements regarding CAL02's ability to address unmet need in patients with severe pneumonia and its other anticipated benefits and expected duration of regulatory exclusivity for CAL02, if approved; the timing and ability to obtain regulatory approval of CAL02; CAL02's potential acceptance by clinicians; the timing, progress and results of additional trials of CAL02 and the ability of such trial results to support regulatory filings and approvals; anticipated actions by FDA, EMA and other regulatory agencies; the Company's ability to support the commercial launch of CAL02, if approved; the anticipated market opportunity for CAL02; and the ability of the product candidates in the Company's pipeline to deliver value to stockholders. All of such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the Company's control, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Such risks and uncertainties include, but are not limited to: the impacts of the ongoing COVID-19 pandemic, including disruption or impact in the sales of the Company's marketed products, interruptions or other adverse effects to clinical trials, delays in regulatory review, manufacturing and supply chain interruptions, adverse effects on healthcare systems, disruption in the operations of the Company's third party partners and disruption of the global economy, and the overall impact of the COVID-19 pandemic on the Company's business, financial condition and results of operations; risks that the Company's business, financial condition and results of operations will be impacted by the spread of COVID-19 in the geographies where the Company's third-party partners operate; whether the Company will incur unforeseen expenses or liabilities or other market factors; delay in or failure to obtain regulatory approval of the Company's product candidates, including CAL02, and successful compliance with the FDA, EMA and other governmental regulations applicable to product approvals, manufacturing facilities, products and/or businesses; general economic conditions, including the potential adverse effects of public health issues, including the COVID-19 pandemic, on economic activity and the performance of the financial markets generally; whether the Company will successfully implement its development plan for its product candidates, including CAL02; whether the Company can successfully collaborate with its partners and market and commercialize its product candidates; the outcome of litigation involving any of its products or that may have an impact on any of its products; possible safety and efficacy concerns; risks that preliminary results from clinical trials are not necessarily predictive of future clinical trial results; the strength and enforceability of the Company's intellectual property rights or the rights of third parties; competition from other pharmaceutical and biotechnology companies and the potential for competition from generic entrants into the market; the risks inherent in drug development and in conducting clinical trials; and those risks and uncertainties identified in the "Risk Factors" section of the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the Securities and Exchange Commission (the "SEC") on March 5, 2021, as updated by the Company's Quarterly Reports on Form 10-Q for the quarters ended March 31, 2021 and June 30, 2021, filed with the SEC on May 10, 2021 and August 9, 2021, respectively, and its other subsequent filings with the SEC. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and the Company does not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.

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Agenda: CAL02 Investor Update

	TOPIC	SPEAKER	Time
1	Strategic Update	Scott Tarriff	8:30 – 8:40
2	Disease State Overview	Judith Ng-Cashin, MD	8:40 – 9:00
3	Unmet Need	Andre Kalil, MD	9:00 – 9:20
4	CAL02 Overview, Clinical Data & Development Plan	Judith Ng-Cashin, MD Samareh Azeredo da Silveira Lajaunias, PhD	9:20 – 9:40
5	Question & Answer	All	9:40 – 10:00

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Eagle Strategic Update
Scott Tarriff

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Disease State Overview
Judith Ng-Cashin, MD

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CAL02 Overview

- First in Class
- Proposed injectable treatment for severely infected patients
- Phase 2b/3 adaptive design
- Applying for Qualified Infectious Disease Product Designation under the GAIN Act
- Potential for 10 yrs Marketing Exclusivity

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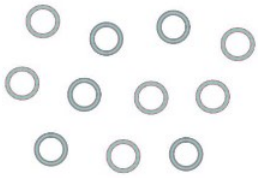
CAL02 (drug product)



Specific mixture of re-engineered empty liposomes solely composed of sphingomyelin and cholesterol capable of capturing and neutralizing a broad spectrum of virulence effectors

- Patented composition of matter
- Sterile liquid solution ready for injection
- Stable for 36 months when refrigerated (6 months when stored at room temperature)
- Route of administration: IV Infusion
  2 doses separated 24 hours apart

CAL02 – Novel, First-in-Class Antitoxin Agent

Mechanism of Action

Address the downstream effects of bacterial Virulence Effectors/ Pore Forming Toxins through competitive inhibition

- Binds to virulence effector molecules secreted by infecting bacteria, prohibiting host tissue cell binding
- Acts as an extracellular "sink" for these toxins
- Potential to attenuate pore forming toxin related effects including host tissue damage, immune dysregulation, and inflammation that contribute to increase disease severity

Lead Indication

Severe Community Acquired Pneumonia

- Significant morbidity and mortality despite advances in direct acting antibacterials
- Addresses significant medical need and burden on health care systems

Differentiated Advantages

- Potential to be used as adjuvant therapy with any traditional antibacterial [therapy agnostic]
- Potential to be used against any bacteria that produces pore forming toxins [bacteria agnostic]
- Potential to carry less risk of antibacterial resistance development

Development Program somewhat de-risked for phase of development

- FTIH proof of concept study showed tolerability as well as trends toward efficacy
- Positive regulatory interactions with FDA and EMA – may be eligible for special designations and review processes
- Scalable manufacturing process

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Pneumonia Overview

Pneumonia is defined as **"new lung infiltrates plus clinical evidence that the infiltrate is of an infectious origin, which include the new onset of fever, purulent sputum, leukocytosis, and decline in oxygenation".** –The Infectious Disease Society & American Thoracic Society

CAP

Pneumonia that is contracted outside of the health care setting is considered community-acquired pneumonia (CAP).

HAP

Hospital-acquired pneumonia (HAP), or nosocomial pneumonia, is a lower respiratory infection that was not incubating at the time of hospital admission and that presents clinically 2 or more days after hospitalization.

VAP

Ventilator-associated pneumonia (VAP) is defined as pneumonia that presents more than 48 hours after endotracheal intubation.

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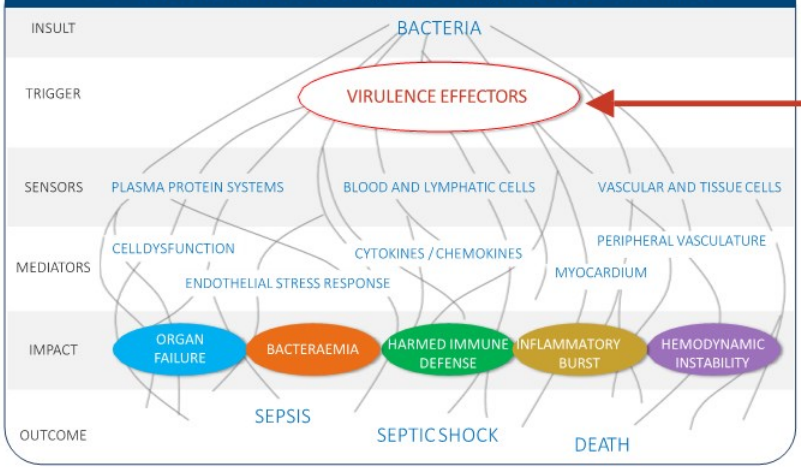
Severe Pneumonia - Key Targets

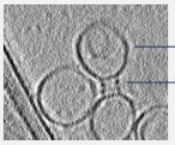
An underserved patient population:

Mortality rates for ICU pneumonia patients remain as high as 40% due to complications which most often occur even when tissues are already pathogen-free, and the pulmonary process is clearing

A COMMON DENOMINATOR IN SEVERE, COMPLICATED, AND RESISTANT INFECTIONS:



CAL02 neutralizes the most relevant virulence effectors in severe pneumonia



Electron micrograph

Virulence effectors have a key role in promoting severe disease:

- play a critical role in the development of severe complications
- reinforce mechanisms of resistance
- facilitate and exacerbate co-infections

CAL02: a non-antibacterial drug that could attenuate these effects

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Complications Associated with Pneumonia

A Significant Unmet Medical Need

Pneumonia is the most common infection requiring hospitalization and admission to ICU*

3rd most common cause of death globally (2.5million deaths/year)**

In the US about 1 million adults seek care for pneumonia yearly and 50,000 die from this disease*

Admission to ICU and length of hospitalization tightly linked to development of pneumonia complications*

35% - 58% mortality rate due to pneumonia complications such as acute respiratory distress, kidney, liver and heart damage and sepsis***

Adequate empirical antibacterial therapy shows no reduction in risk of death for pneumonia patients admitted to ICU*

Pneumonia complications place considerable burden on healthcare resources through increases in rates of hospitalization, lengthy in-patient care, cost of care and readmission rates*

*American Thoracic Society Top 20 Pneumonia Facts--2019 **Pneumonia & Deaths 2020 American Thoracic Society ***Ibn Saled et al, Crit.Care Med 47, 445-352 2019

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Bacterial Virulence Effectors (VEs)

VEs play a decisive role in the development of long-term, severe, and fatal pneumonia complications

- Currently not targeted by established antibiotics

VEs are a part of the pathogen's armory that triggers multiple pathogenic processes:

- Promote bacterial colonization and growth
- Disrupt tissue barriers
- Facilitate tissue penetration and infection's invasiveness
- Act synergistically to help bacteria evade the innate and adaptive immune response of the host

Ultimately VEs contribute to **edema, inflammation, and organ failure**

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Bacterial Virulence Effectors (VEs) Classification

Pore-forming toxins (PFTs)

- Single largest category (25-30% of cytotoxic bacterial proteins)
- Function to perforate membranes of host cells
- Classified as α-PFTs and β-PFTs based on the pore-forming mechanism
- β-PFTs and most α-PFTs preferentially target cholesterol and sphingomyelin

Other Virulence Effectors

- Toxins with hemolytic activity
- Toxins with destructive enzymatic activities (proteases, lipases, DNase)
- Secreted vesicular or appended virulence effectors

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Bacterial Causes of Pneumonia

Severe CAP

100%

S. pneumoniae: 50-60% of SCAP cases
- Leading cause of lower respiratory infection morbidity and mortality globally (1.2 million deaths/year)*

Legionella pneumophila*: 8-12%*

S. aureus (including MSSA and MRSA): 2-12%
- Mortality rates of 50% in SCAP*

H. influenzae: 5-10%*

P. aeruginosa: (3-6%)
- Significant mortality rates*

Gram-negative enteric bacilli (GNEB) such as E. coli and K. pneumoniae: <2%*
- Significant mortality rates

HAP

- *H. influenzae*- early onset HAP
- *P. aeruginosa*
- *S. aureus (including MSSA and MRSA)*
- GNEB *(K. pneumoniae, E. coli)*
- *Acinetobacter** species- ICU patients
- *S. pneumoniae*- early onset HAP

VAP

- *P. aeruginosa*
- *S. aureus (including MSSA and MRSA)*
- *S. maltophilia*
- *Acinobacter species*

*Cilloniz C, et al Thorax 66 340-346 2011

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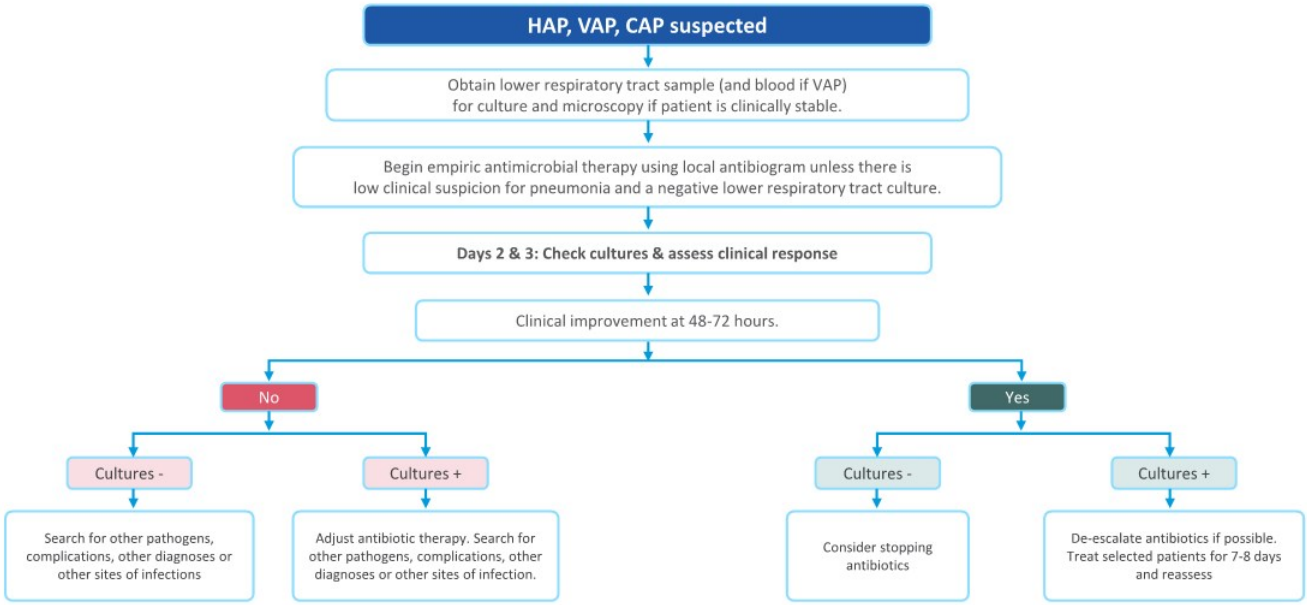
Pneumonia Management



Revised: *Trevor Van Schooneveld, MD and Kiri Rolek, PharmaD (July 2015)*

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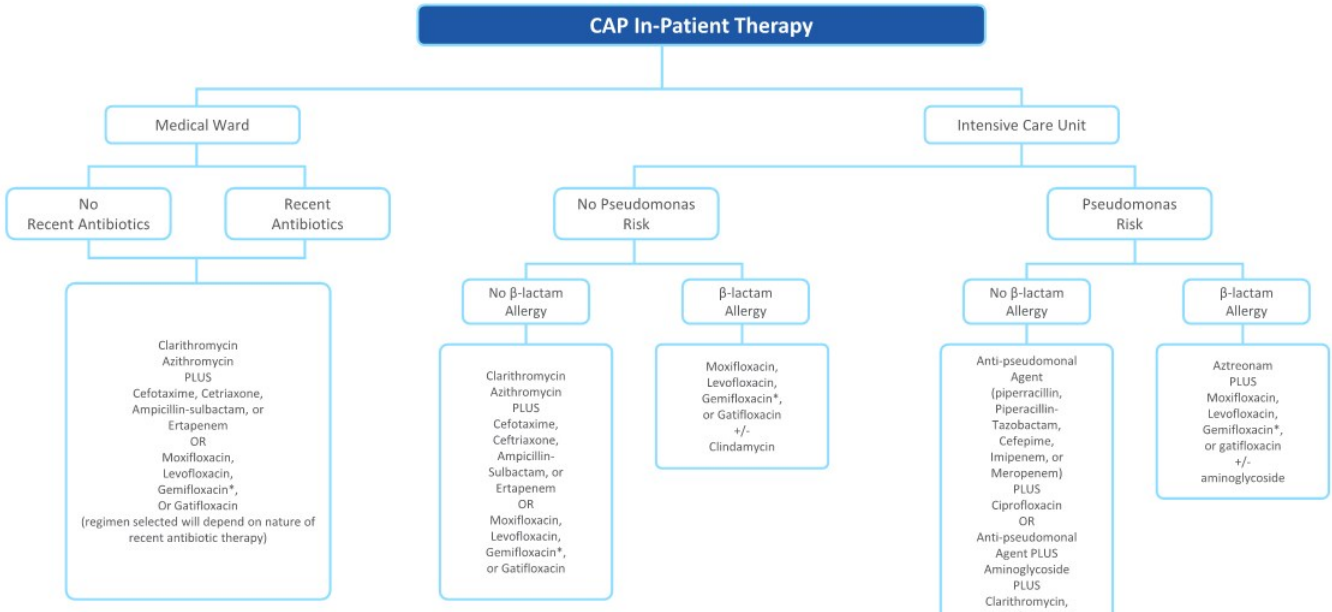
Pneumonia Treatment



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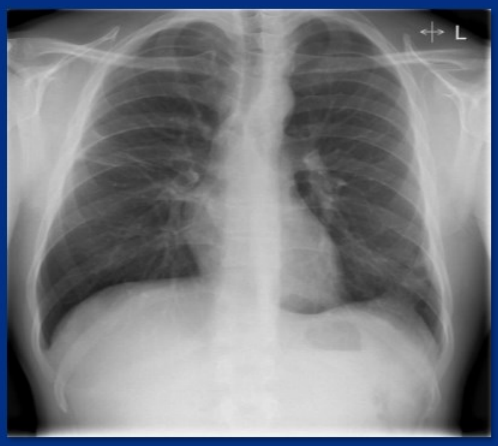
Unmet Need
Andre Kalil, MD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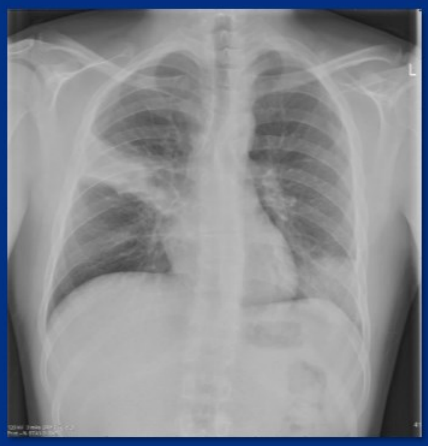
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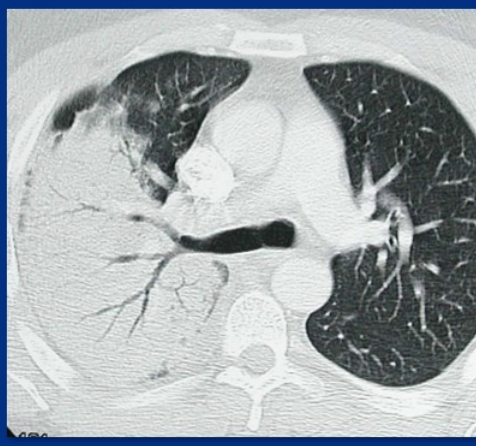
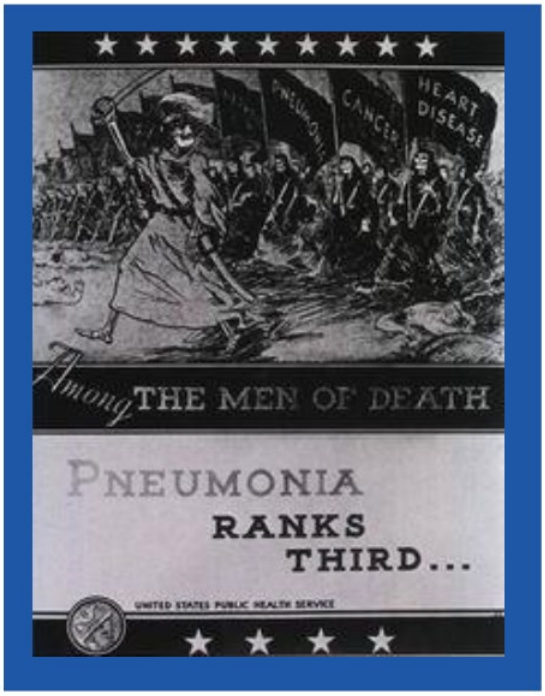
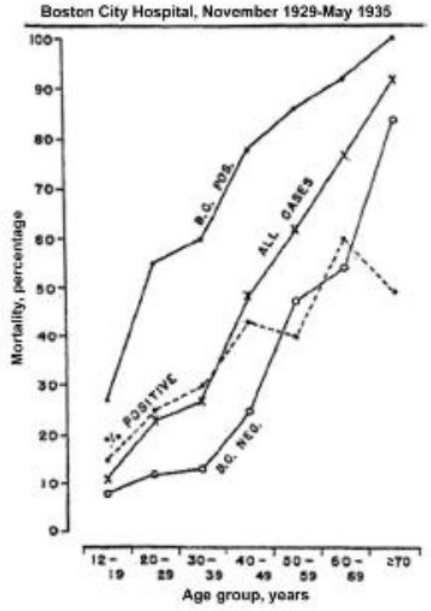


Pneumonia before antibiotics





Tilghman Arch Intern Med 1937;59:602–19.

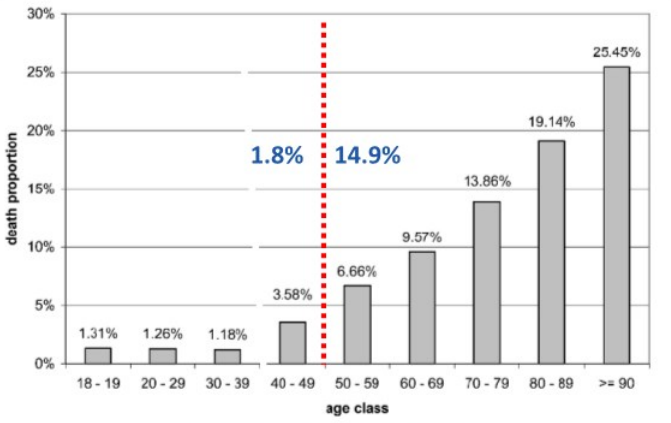
Mortality of hospitalized CAP

German, 2006-2007

N=388,406 hospitalized CAP
CRB-65

- class 1: 16.55%
- class 2: 71.55%
- class 3: 11.91%
- Mechanical ventilation: 5.1%

hospital mortality: 14.1%



Ewig Thorax 2009;64:1062-1069

Severe CAP

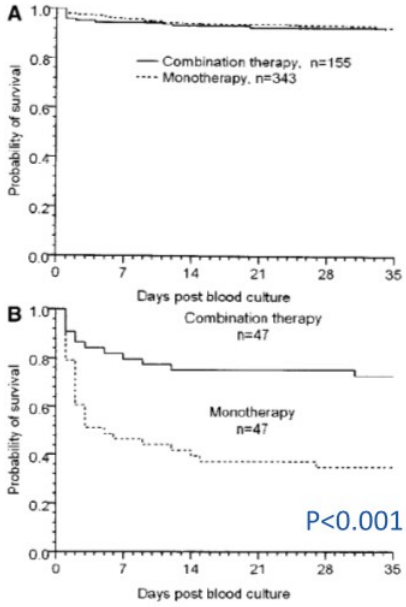
Retrospective study of prospective data, N=844 severe **bacteremic pneumococcal pneumonia**

Pitt bacteremic score ≤/>4

Critically ill pts (30d mortality)

Combination 23.4%

Monotherapy 55.3%



Baddour AJRCCM 2004;170:440

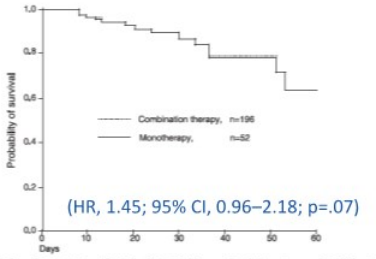
Severe CAP

Retrospective study of prospective data, N=529 ICU admitted CAP
Shock Y/N

Monotherapy vs. combination

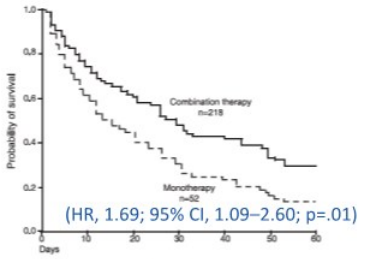
β-lactam plus **macrolide**
(HR, 1.73; 95% CI, 1.08 –2.76; p=.**02**)

β-lactam plus **fluoroquinolones**
(HR, 1.77; 95% CI, 1.01–3.15; p=.**05**)



(HR, 1.45; 95% CI, 0.96–2.18; p=.07)

Figure 1. Survival graph for patients without shock stratified by severity of illness (censored at 60 days).



(HR, 1.69; 95% CI, 1.09–2.60; p=.01)

Figure 2. Survival graph for patients with shock stratified by severity of illness (censored at 60 days).

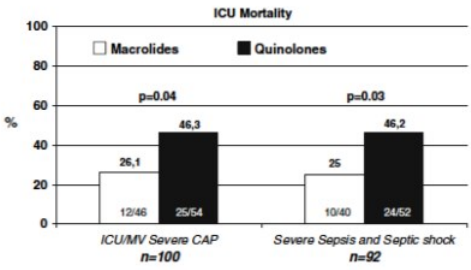
Rodriguez CCM 2007;35:1493

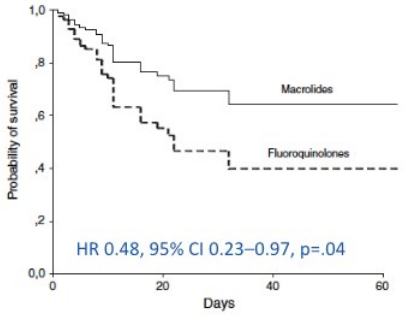
Severe CAP

Prospective observational study
N=217 SCAP requiring MV
Severe sepsis/septic shock 75.5%

Therapy according to ATS/IDSA 2007 guidelines, N=100 (45.9%)

- Combination with fluoroquinolone (N=46) or macrolide (N=56)





Martin-Loeches ICM 2010;36:612

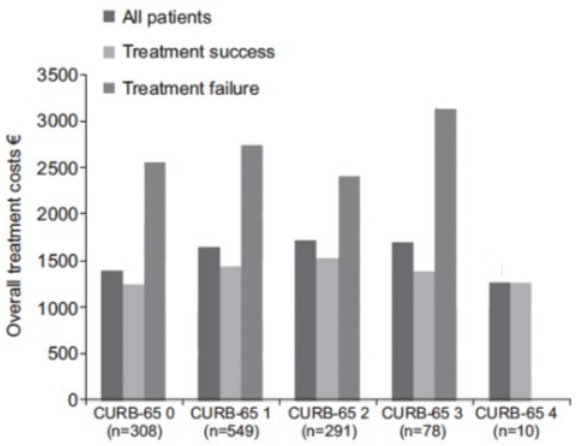
Hospitalized CAP – Treatment failure

2 open, prospective multicenter studies (moxifloxacin; standard)

n = 1236

Treatment failure (15.9%)

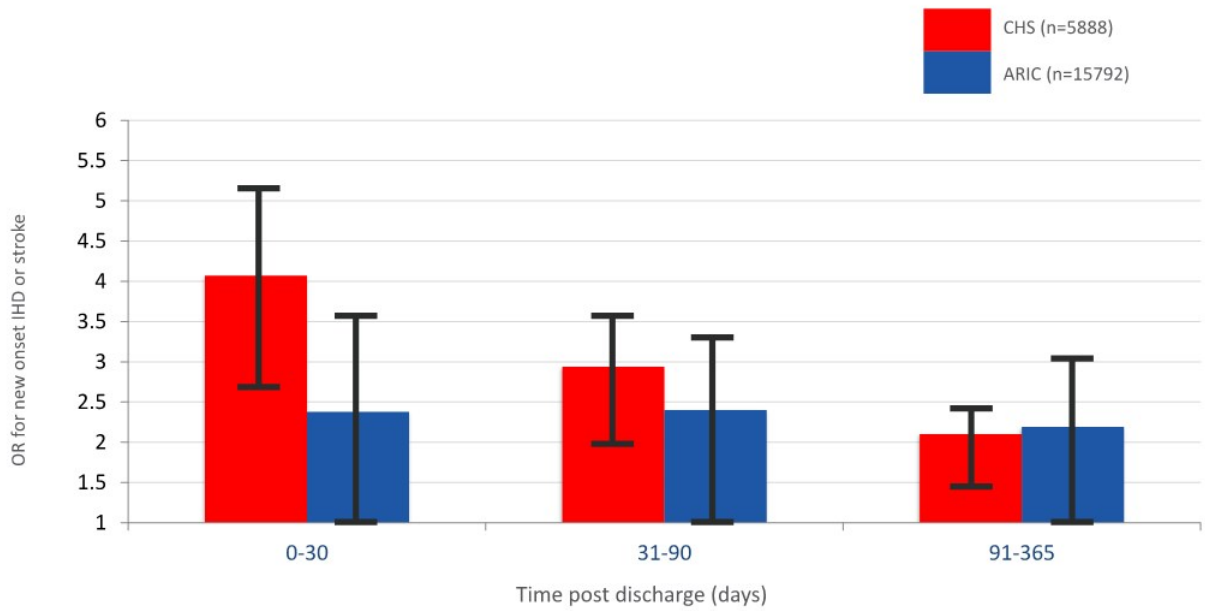
- CURB65≥2 (20.3%, p=.004)
- LOS (15.4 vs 9.8d, p<.001)
- Costs (2206 vs 1284€, p<.001)
- Mortality (17.3 vs 5.2%, p<.001)



Ott ERJ 2012;39:611

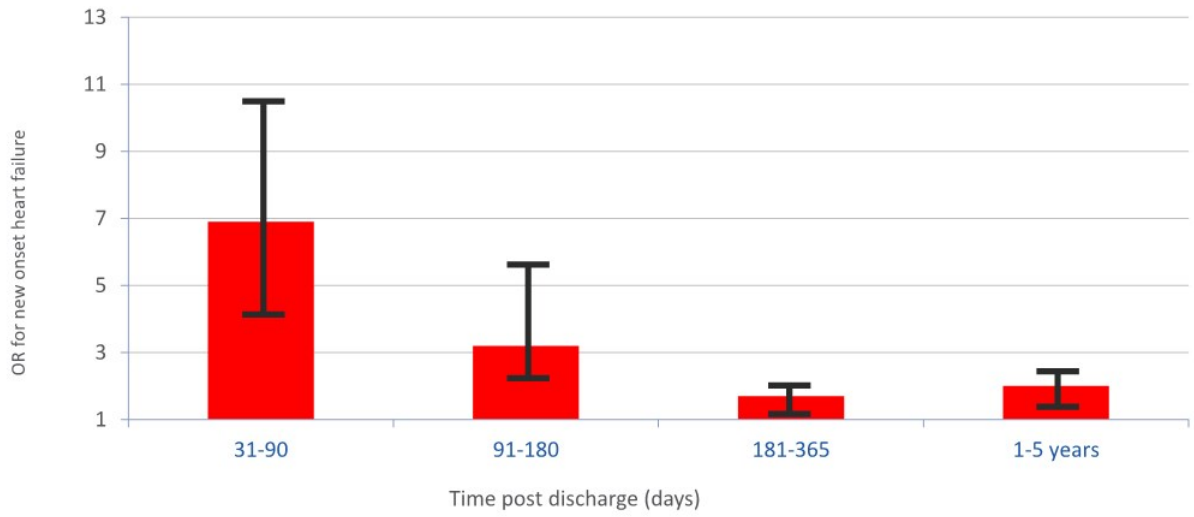
- ✓ **89.1% of group standard received therapy in accordance with guidelines**
- ✓ **Initial therapy with β-lactam + macrolide was less frequently associated with TF compared with β-lactam, particularly in SCAP.**

Pneumonia and Stroke/AMI



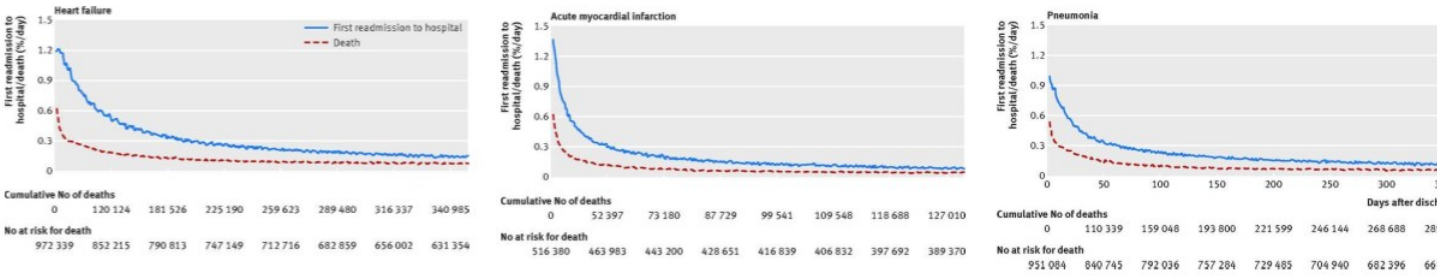
Corales-Medina et al JAMA 2015

Pneumonia and New Onset Heart Failure



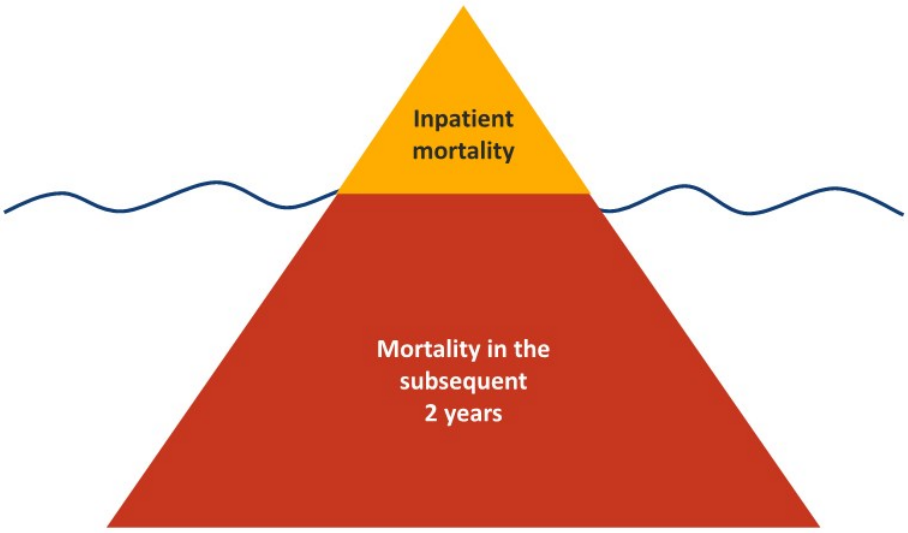
Corales-Medina et al Am Heart J 2015

Fig 1 Risks (hazard ratios) of first readmission to hospital and death for one year after hospitalization for heart failure, acute myocardial infarction, or pneumonia.



Dharmarajan K et al. BMJ 2015;350:bmj.h411

Mortality Due to CAP



www.nature.com/scientificreports

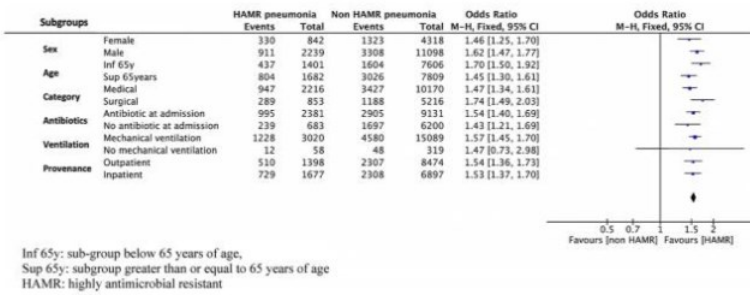
scientific reports

OPEN

Association between mortality and highly antimicrobial-resistant bacteria in intensive care unit-acquired pneumonia

Ines Lakbar[1,2,26], Sophie Medam[1,26], Romain Ronflé[1], Nadim Cassir[3], Louis Delamarre[1,2], Emmanuelle Hammad[3], Alexandre Lopez[1,3], Alain Lepape[4,5,6], Anaïs Machut[6,7], Mohamed Boucekine[8], Laurent Zieleskiewicz[2], Karine Baumstarck[8], Anne Savey[6,7,8], Marc Leone[1,3,9✉] & REA RAISIN Study Group*

Data on the relationship between antimicrobial resistance and mortality remain scarce, and this relationship needs to be investigated in intensive care units (ICUs). The aim of this study was to compare the ICU mortality rates between patients with ICU-acquired pneumonia due to highly antimicrobial-resistant (HAMR) bacteria and those with ICU-acquired pneumonia due to non-HAMR bacteria. We conducted a multicenter, retrospective cohort study using the French National Surveillance Network for Healthcare Associated Infection in ICUs ("REA-Raisin") database, gathering data from 200 ICUs from January 2007 to December 2016. We assessed all adult patients who were hospitalized for at least 48 h and presented with ICU-acquired pneumonia caused by *S. aureus*, *Enterobacteriaceae*, *P. aeruginosa*, or *A. baumannii*. The association between pneumonia caused by HAMR bacteria and ICU mortality was analyzed using the whole sample and using a 1:2 matched sample. Among the 18,497 patients with at least one documented case of ICU-acquired pneumonia caused by *S. aureus*, *Enterobacteriaceae*, *P. aeruginosa*, or *A. baumannii*, 3081 (16.4%) had HAMR bacteria. The HAMR group was associated with increased ICU mortality (40.3% *vs.* 30%, odds ratio (OR) 95%, CI 1.57 [1.45–1.70], $P<0.001$). This association was confirmed in the matched sample (3006 HAMR and 5640 non-HAMR, OR 95%, CI 1.39 [1.27–1.52], $P<0.001$) and after adjusting for confounding factors (OR ranged from 1.34 to 1.39, all $P<0.001$). Our findings suggest that ICU-acquired pneumonia due to HAMR bacteria is associated with an increased ICU mortality rate, ICU length of stay, and mechanical ventilation duration.



Subgroups		HAMR pneumonia Events	HAMR pneumonia Total	Non HAMR pneumonia Events	Non HAMR pneumonia Total	Odds Ratio M-H, Fixed, 95% CI
Sex	Female	330	842	1323	4318	1.46 [1.25, 1.70]
	Male	911	2239	3308	11098	1.62 [1.47, 1.77]
Age	Inf 65y	437	1401	1604	7606	1.70 [1.50, 1.92]
	Sup 65years	804	1682	3026	7809	1.45 [1.30, 1.61]
Category	Medical	947	2216	3427	10170	1.47 [1.34, 1.61]
	Surgical	289	853	1188	5216	1.74 [1.49, 2.03]
Antibiotics	Antibiotic at admission	995	2381	2905	9131	1.54 [1.40, 1.69]
	No antibiotic at admission	239	683	1697	6200	1.43 [1.21, 1.69]
Ventilation	Mechanical ventilation	1228	3020	4580	15089	1.57 [1.45, 1.70]
	No mechanical ventilation	12	58	48	319	1.47 [0.73, 2.98]
Provenance	Outpatient	510	1398	2307	8474	1.54 [1.36, 1.73]
	Inpatient	729	1677	2308	6897	1.53 [1.37, 1.70]

Inf 65y: sub-group below 65 years of age,
Sup 65y: subgroup greater than or equal to 65 years of age
HAMR: highly antimicrobial resistant

Figure 2. Risk of mortality associated with HAMR status by subgroup.

Lakbar I et al. Sci Report 2021 Aug 13;11(1):164

Official journal of the Spanish Society of Chemotherapy

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Original

Revista Española de Quimioterapia
doi:10.37201/req/031.2021

Secondary infections in mechanically ventilated patients with COVID-19: An overlooked matter?

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Article history
Received: 25 February 2021; Accepted: 8 March 2021; Published: 23 March 2021

ABSTRACT

Introduction. The susceptibility to infection probably increases in COVID-19 patients due to a combination of virus and drug-induced immunosuppression. The reported rate of secondary infections was quite low in previous studies. The ob-

Conclusions. Our data suggest that the incidence of secondary infection and infection by antimicrobial resistant pathogens is very high in critically ill patients with COVID-19 with a significant impact on prognosis.

Keywords: Acute respiratory distress syndrome, COVID-19, mechanical ventilation, infection, ventilator-associated pneumonia, bacteremia

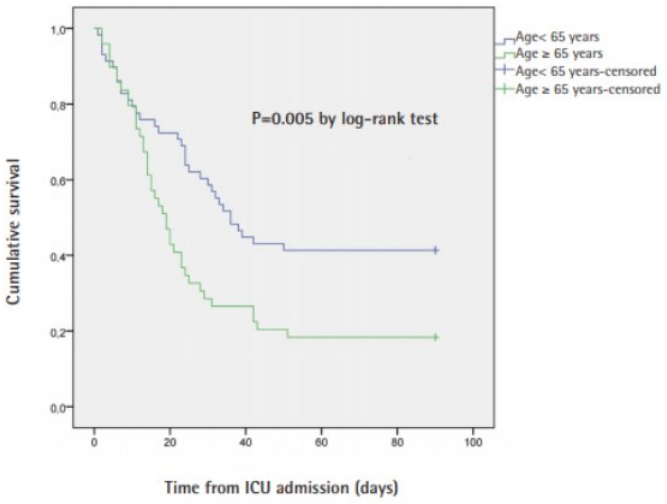

Figure 1 Kaplan-Meier curves for 90-day survival in patients with age < 65 years and ≥ 65 years

Suarez-de-laRica et al. Rev Esp Quimiot 2021 Aug;34(4):330-336. doi: 10.37201/req/031.2021

Acute Pneumonia (Community and Hospital Acquired)

- Most common cause of hospitalization
- Most common cause of Intensive Care Unit admission due to an infection
- Most common cause of Acute Respiratory Distress Syndrome – ARDS
- Most common cause of Sepsis
- Acute pneumonia also leads to serious cardiovascular complications such as heart failure, heart attack, and stroke
- Rapidly increasing rate of antibiotic resistance – antibiotic treatment failure
- Among the most common causes of hospital readmission
- High in-hospital mortality rate even with adequate treatment
- High post-hospitalization mortality rate 1-2 years after pneumonia episode

Metley JP et al. Am J Respir Crit Care Med. 2019 Oct 1;200(7):e45-e67

Dharmarajan K et al. BMJ 2015;350:bmj.h411

Corales-Medina et al Am Heart J 2015

Ott ERJ 2012;39:611

CAL02 Overview, Clinical Data & Development Plan

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Judith Ng-Cashin, MD

EAGLE PHARMACEUTICALS

Pneumonia treatment is complex.

CAL02, a novel antitoxin liposomal agent, has the potential to be the constant while the care team works through all the variables

The death rate from pneumonia in the U.S. has had little improvement since antibiotics became widespread more than half a century ago. We are not yet winning the battle against pneumonia. – *The American Thoracic Society*

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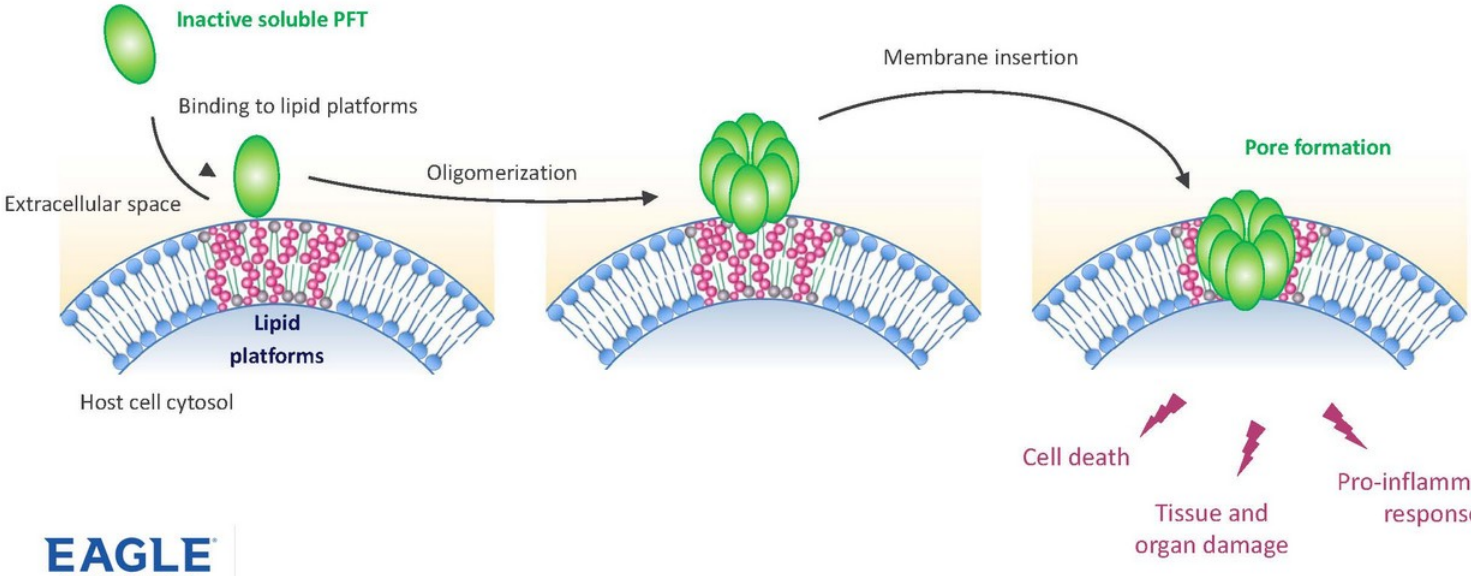
Pore-Forming Toxins (VE): MoA

We believe "CAL02 overcomes the limitations faced by drugs targeting virulence so far".



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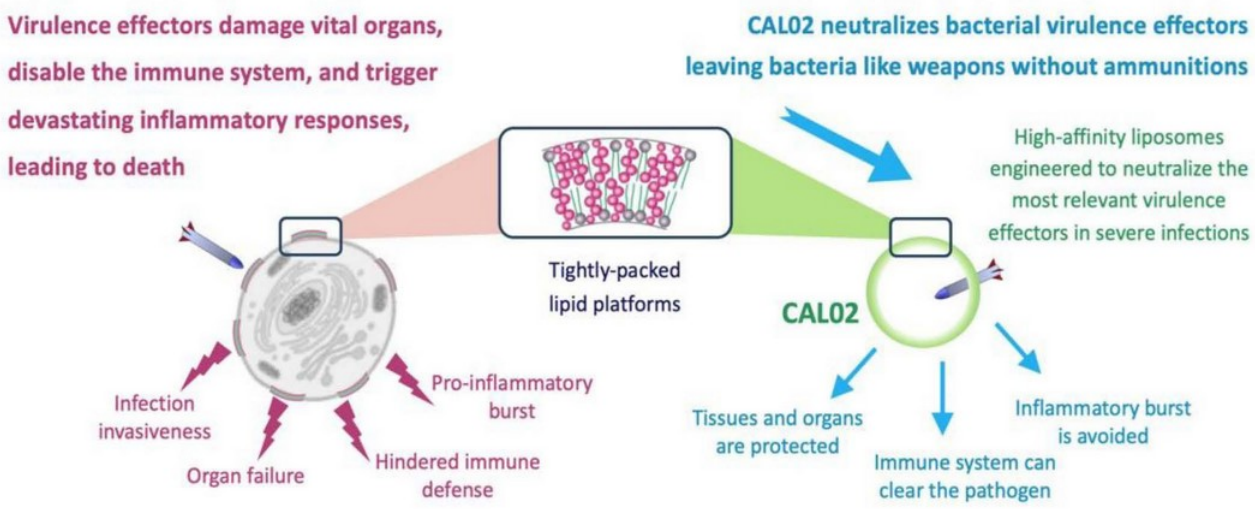
CAL02: Activity Against Virulence Effectors

CAL02 mimics specific membrane raft-like lipid platforms and acts as a high-affinity trap, winning over cells.



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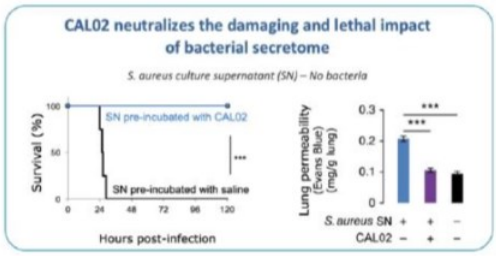
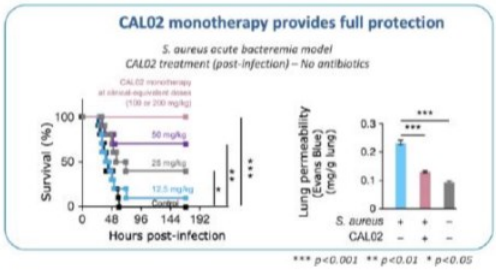
CAL02: Preclinical Data

Non-Clinical Efficacy and MOA Studies

In Vitro models	*Strains*	*Results*
Assays using purified virulence effectors Assays using culture supernatant Assays using direct exposure to bacteria	**Gram+** S. pneumoniae S. aureus (incl. MRSA) S. pyogenes C. perfringens C. tetani **Gram-** P. aeruginosa (incl. MDR strains) E. coli (incl. MDR strains) Other strains (ongoing)	Virulence effectors bind to CAL02 Greater affinity for CAL02 than to cells Fully protects from cell lysis and cytotoxicity Decreases inflammatory responses Polarizes macrophages to mount a specific immune response against the infection Hinders biofilm formation

In Vivo models	*Treatment*	*Results*
Bacteremia & Pneumonia & Skin Infections Gram+: S. pneumoniae & S. aureus (incl. MRSA USA300) Gram- P. aeruginosa (ongoing)	CAL02 monotherapy/CAL02 + antibiotics CAL02 hours after infections challenge/ antibiotics	Improves survival Decreases inflammatory responses Protects organs (lung, heart injury, tissue necrosis) Allows immune system to combat pathogen (decreased bacteria loads)





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Safety Pharmacology and Toxicology

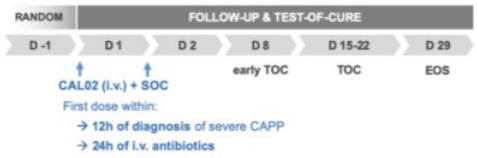
- **Safety pharmacology studies in rats** (respiratory, CNS) **and dogs: no safety signals even at the maximum feasible dose, i.e., a maximum tolerated dose** (MTD) **could not be determined**
- **CAL02 is taken up by macrophages and eliminated via the liver, its half-life in human is estimated to be 24-30 hours**
- **CAL02- toxin complex degradation and elimination do not cause any toxicity, even in critically ill patients with liver failure**
- **Excellent biological safety profile** (no impact on flora, non-immunogenic, biologically neutral)

EAGLE PHARMACEUTICALS

CAL02 Clinical Data

First-In Human Study Results

- Randomized, double-blind, placebo-controlled
- 3 arms / 19 patients:
  - CAL02 Low dose (4 mg/kg) + Standard of Care
  - CAL02 High dose (16 mg/kg) + Standard of Care
  - Placebo (saline) + Standard of Care
- 2 IV administration 24h apart
- Severe CAPP: At least 1 major criteria (mechanical ventilation/ vasopressors) or 3 minor criteria
- Primary objective: Safety & Tolerability
- Secondary objective : Efficacy & Pharmacodynamics



IDMC
- Prof. Jean Chastre, Chairman (FR)
- Prof. Steven Opal (USA)
- Prof. Jérôme Pugin (CH)
- Dr. Philippe Eggimann (CH)

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Baseline characteristics

Disease severity of the study population corresponded to that expected from the inclusion/ exclusion criteria

Severity at baseline:

- Mean APACHE II Score: 21.5 (95% CI 19.3-23.7)
- 58% in Septic Shock
- >40% under Invasive Mechanical Ventilation

No differences between treatment groups considered to have a substantial effect on safety and efficacy outcomes

Safety outcomes / TEAEs

CAL02 showed **the same safety profile as placebo** (saline)

- AE occurred in 12 (85%) of 14 patients in the CAL02 groups combined and in all 5 (100%) patients in the placebo group.
- SAE occurred in 4 (29%) of 14 patients in the CAL02 groups combined and 2 (40%) of 5 patien in the placebo group
- 1 AE (mild increase in the triglycerides) in a patient in the CAL02 High dose group was reported as related to study drug. However, the analysis of the changes in triglyceride in the CAL02 groups compared with the placebo group revealed no correction with CAL02.
- No AEs were liked to local tolerability events.

THE LANCET
Infectious Diseases

Articles

Laterre et al. Lancet Infect Dis 2019 19(6):629-630

CAL02, a novel antitoxin liposomal agent, in severe pneumococcal pneumonia: a first-in-human, double-blind, placebo-controlled, randomized trial

Efficacy Outcomes

	Low-dose CAL02 (n=3)	High-dose CAL02 (n=10)	Placebo (n=5)
Cured at early test of cure (day 8)	0	5 (56%)*	1 (20%)
Cured at test of cure (between days 15–22)	2 (100%)*	10 (100%)	5 (100%)
Median time to cure (days)	15·0 (14 to 16)†	8·0 (6 to 16)	10·0 (7 to 14)
All-cause mortality	1 (33%)	1 (10%)	1 (20%)
Relative change in Sequential Organ Failure Assessment score from baseline to day 8	−65·9% (−34·7 to −97·1)	−64·7% (−46·3 to −83·1)	−29·2% (−12·8 to −45·5)
Relative change in Acute Physiology and Chronic Health Evaluation II score from baseline to day 8	−59·9% (−34·0 to −85·8)	−60·4% (−45·3 to −75·5)	−22·1% (−15·5 to −28·7)
Relative change in PaO_2/FiO_2 from baseline to day 8	153·1 %(116·2 to 189·9)	78·4% (7·4 to 149·3)	58·5% (−27·5 to 137·9)
Median duration of invasive mechanical ventilation (days)†	12·0 (5 to 19)†	4·5 (4 to 14)	12·0 (11 to 56)
28-day ventilation-free days (days)	16·5 (1·8 to 31·2)†	25·1 (22·0 to 28·2)†	17·8 (7·7 to 27·9)
Median duration of intensive care unit stay (days)	15·0 (9 to 21)†	5·0 (2 to 15)	12·0 (6 to 56)
Median duration of stay in hospital (days)	33·0 (12 to 54)†	13·0 (4 to 28)†	21·0 (6 to 56)

Data are n (%), median (range), or mean (95% CI). PaO_2/FiO_2=partial pressure of oxygen in the blood/fraction of inspired oxygen. *One patient was missing for the assessment (because of death). †One patient censored because of death.

Overview of primary and secondary efficacy endpoints in CAL02 and placebo treatment groups (as-treated population)

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CAL02: Therapeutic Benefit & Unique Potential

Potential to become first line empirical therapy*

- Excellent **safety** profile
- Does not prompt any new **resistance**
- Unique **broad-spectrum** activity
- **No impact** on flora
- **Non**-immunogenic
- Biologically **neutral**

Offers a unique therapeutic benefit to critically ill patients

Positive trends over placebo in efficacy parameters*+

- Reduction of mortality risk+
- Potentially faster and complete recovery of organ function +
- Shorter duration of mechanical ventilation
- Immediate decrease in inflammatory biomarkers (e.g. IL-6)
- Shorter ICU length of stay+

+ statistically significant

THE LANCET
Infectious Diseases

Comment

Pletz et al. Lancet Infect Dis 2019 19(6):564-565

One step closer to precision medicine for infectious diseases

"A medical breakthrough"

CAL02 represents a milestone"

"Potentially suitable for adjunctive empirical treatment"

Addressing a significant unmet medical need

A straightforward and innovative approach

A potentially unique therapeutic benefit to critically ill patients

Already achieved critical de-risking milestones

*Laterre et al. Lancet Infect Dis 2019 19(6):629-630

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CAL02 Competitive Advantages

Limitations of current approaches
(approved / in development)

Limited use

- Restrictions imposed by stewardship measures and purchasers, as antibiotics are inevitably linked to the emergence of new resistances

Slow and laborious market penetration

- Based on non-inferiority results
- Last-resort treatments
- Increasingly competitive space

Limited scope of application

- Action dedicated against resistant mechanism
- New mechanisms ultimately facing resistance issues
- Monoclonal antibodies targeting a single toxin
- Agents targeting a downstream specific pathway or cytokine dedicated to target patients already in shock

CAL02

- Potentially will not drive resistance; fills a significant medical gap
- Offers physicians a new treatment; potential to dramatically improve outcomes
- Combines with any treatment (antibacterial agnostic)
- May lead to a tremendous economy on cost of care; broad-spectrum (used irrespective of pathogen identification or hemoculture or resistance to antibacterials)
- Broad therapeutic impact
- Potential for expedited regulatory pathway to approval

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CAL02 Phase 2 Clinical Development Plan

Development Costs Through Interim Results

	ITEM	COST
1	Deal Signing Milestone 1	$10M
2	Phase I – Drug-Drug Interaction	$1M
3	P2B/3 Multicenter Global Study – Part 1 Through Interim Analysis Results	$21M
4	Clinical Trial Materials	$3M
	TOTAL	$35M

Key Next Steps

- IND Filing
- Start P2B/3 Multicenter Global Study – Part
- P2B/3 Multicenter Global Study – Part 1 Interim Analysis Results

EAGLE PHARMACEUTICALS

Therapeutic Benefit & Unique Potential

THE LANCET
Infectious Diseases

Articles

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CAL02, a novel antitoxin liposomal agent, in severe pneumococcal pneumonia: a first-in-human, double-blind, placebo-controlled, randomized trial

Offers a potentially therapeutic benefit to critically ill patients

Positive trends over placebo in efficacy parameters

- Reduction of mortality risk*
- Faster and complete recovery of organ function *
- Shorter duration of mechanical ventilation
- Immediate decrease in inflammatory biomarkers (e.g. IL-6)
- Shorter ICU length of stay*

* *statistically significant*

Potential to become first line empirical therapy

- Excellent **safety** profile
- Does not prompt any new **resistance**
- Unique **broad-spectrum** activity
- **No impact** on flora
- **Non**-immunogenic
- Biologically **neutral**

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Question & Answer

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