



BIOMÉRIEUX

# VIDAS<sup>®</sup> B·R·A·H·M·S PCT<sup>™</sup>

Helping you manage  
antibiotic therapy in LRTI\*



PIONEERING DIAGNOSTICS

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## Helping you manage antibiotic therapy in LRTI\*

### BECAUSE IT MAKES SENSE ON VIDAS<sup>®</sup>

- **On-demand** testing adapted to Primary Care and Emergency settings
- Rapid result: **only 20 minutes**
- Automated test on **easy-to-use** benchtop instrument
- **Cost-efficient** solution: 1 patient = 1 test

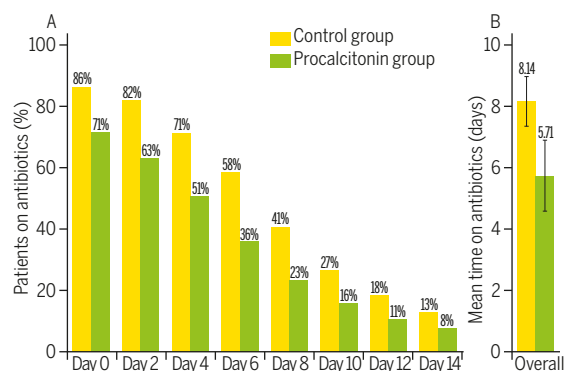
### PRESCRIBE ANTIBIOTICS – OR NOT – WITH CONFIDENCE

To reduce antibiotic exposure and side effects and improve survival, you can count on VIDAS<sup>®</sup> B·R·A·H·M·S PCT<sup>™</sup>. It has been **validated in a clinical setting** for the management of antibiotic therapy in LRTI\* patients<sup>12</sup>.

Numerous international, multi-center, randomized control studies have shown that **PCT-guided antibiotic therapy in LRTI\* is safe and effective**<sup>13,14</sup>.

**Significant reduction** was observed in the PCT groups vs. the control groups in:

- **antibiotic initiation:** 70% vs 86%
- **antibiotic treatment duration:**  
8 days vs 9.4 days
- **total antibiotic exposure:**  
5.7 days vs 8.1 days
- **antibiotic-related side effects:**  
16% vs 22%
- **mortality at 30 days:** 9% vs 10%



PCT reduces antibiotic exposure and treatment duration<sup>14</sup>

A - Proportion of patients on antibiotics

B - Mean duration of antibiotic use

Give antibiotics to the right patients,  
at the right time, for the right duration

# Did you know?



LRTI\* account for **10%** of the worldwide burden of morbidity and mortality<sup>1</sup>



**75%** of all antibiotic doses worldwide are prescribed for acute respiratory tract infections in spite of mainly viral cause<sup>1</sup>



**50%** of antibiotics prescribed in the US for acute respiratory conditions are unnecessary<sup>2</sup>

## The Challenge of LRTI\* Management: Does Your Patient Really Need Antibiotics?

### Many different forms:

- Acute bronchitis
- Community-Acquired Pneumonia (CAP)
- Acute exacerbation of chronic obstructive pulmonary disease (COPD)

### Non-specific clinical characteristics:

- Cough
- Sputum
- Fever
- Shortness of breath

In the past, this challenge was met with empiric antibiotic therapy, resulting in:

- Antibiotic misuse
- Inappropriate initiation and prolonged use
- Antibiotic-associated infections such as *Clostridium difficile*, and other adverse effects<sup>3,4</sup>
- Increasing antimicrobial resistance

**Today, a valuable diagnostic tool can help you decide if antibiotics are warranted and optimize treatment duration.**

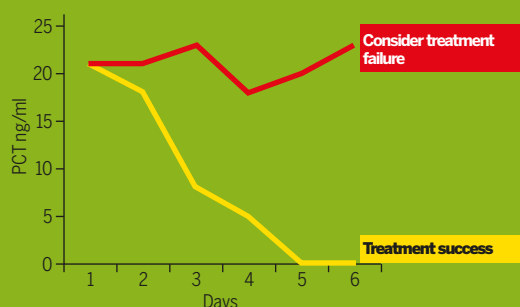
## How does Procalcitonin (PCT) Provide Critical Information?

A host biomarker specific for severe bacterial infection<sup>7-10</sup>

PCT is produced by numerous organs at a cellular level after bacterial pro-inflammatory stimulation<sup>5,6</sup>. Its expression is inhibited by viral infections.

- Rises within 3-6 hours from bacterial insult
- Daily decrease of 50% as infection is resolved
- Proven to aid in monitoring patient response to antibiotic therapy<sup>11</sup>

Monitoring antibiotic treatment with serial PCT measurements  
Adapted from Brunkhorst FM.<sup>9</sup>



\* LRTI: Lower Respiratory Tract Infections.



# VIDAS<sup>®</sup> B·R·A·H·M·S PCT<sup>™</sup> HELPS YOU IMPROVE AN

## START ANTIBIOTICS OR NOT?

Recommendations to start antibiotics <sup>12</sup>:

PCT value	< 0.1 ng/mL	0.1-0.25 ng/mL	0.26-0.5 ng/mL	> 0.5 ng/mL
Bacterial infection**	Absent	Unlikely	Possible	Suggestive
Initiation of antibiotic therapy	Strongly discouraged	Discouraged	Recommended	Strongly recommended

## WHEN TO STOP ANTIBIOTICS?

Testing PCT at regular intervals\*\*\* combined with clinical assessments can support decision-making on antibiotic discontinuation for patients with LRTI\*:

**If PCT ≤ 0.25 ng/mL ► Discontinue antibiotics <sup>12</sup>**

**For cases of sepsis in the ICU:**

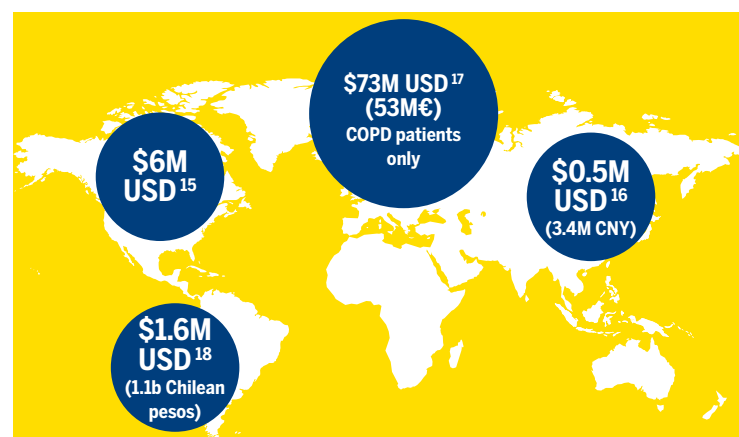
**If PCT < 0.5 ng/mL (or PCT drop ≥ 80%) ► Discontinue antibiotics <sup>11</sup>**

Consider continuing antibiotics in presence of clinical instability or disease progression.

If PCT remains high, consider treatment failure.

## SUPPORTING HOSPITAL COST OPTIMIZATION

Several health economics studies have shown that PCT-guided antibiotic strategies in LRTI\* are **cost-effective in different settings**: primary care, intensive care units and emergency departments.



\*\* Adapted from VIDAS<sup>®</sup> B·R·A·H·M·S PCT<sup>™</sup> package insert

\*\*\* Every other day or every 2 days, depending on the patient evolution.

Estimated total annual savings when using a PCT algorithm

# ANTIBIOTIC STEWARDSHIP



**“Use of sensitive procalcitonin measurements in clinical algorithms can reduce antimicrobial overuse, decreasing the risk of side effects and controlling emerging bacterial multiresistance.”**

Schuetz P, *et al.* Overview of procalcitonin assays and procalcitonin-guided protocols for the management of patients with infections and sepsis. *Expert Review of Molecular Diagnostics* 2017;17(6):593-601.



**“PCT may be safely incorporated into treatment algorithms for children with CAP to reduce antibiotic administration and duration.”**

Stockman *et al.* Procalcitonin Accurately Identifies Hospitalized Children with Low Risk of Bacterial Community-Acquired Pneumonia. *Journal of The Pediatric Infectious Diseases Society* 2017 Feb 3. doi:10.1093.



**“Given the prevalence of COPD and the duration of illness, a reduction in antibiotic prescriptions for the treatment of exacerbations could have a tremendous impact on the overall economic burden of the disease under current budget constraints. In addition, the controlled prescription of antibiotics decreases selective pressure for the emergence of bacterial resistance.”**

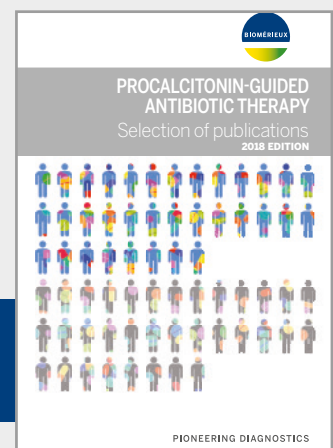
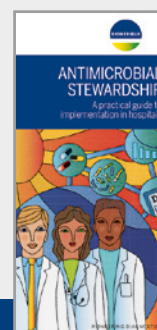
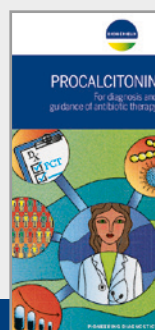
Stolz D, *et al.* Antibiotic treatment of exacerbations of COPD: a randomized, controlled trial comparing procalcitonin-guidance with standard therapy. *Chest* 2007;131(1):9-19.



**“Good compliance with the PCT algorithm is possible in real-life conditions but has to be reinforced to achieve optimal benefit.”**

Albrich WC, *et al.* Effectiveness and Safety of Procalcitonin-Guided Antibiotic Therapy in Lower Respiratory Tract Infections in “Real Life”: An International, Multicenter Poststudy Survey (ProREAL). *Arch Intern Med* 2012;172(9):715-722.

Discover more about PCT and antimicrobial stewardship:



AVAILABLE ON

<http://www.biomerieux-diagnostics.com>  
or from your local bioMérieux representative

PIONEERING DIAGNOSTICS

# AVAILABLE ON INSTRUMENTS OF THE VIDAS® FAMILY: VIDAS®, MINI VIDAS® AND VIDAS® 3



## VIDAS® ACUTE CARE PANEL

- B•R•A•H•M•S PCT™
- D-Dimer Exclusion™ II
- High sensitive Troponin I
- NT-proBNP2
- Galectin-3
- CK-MB
- Myoglobin
- Digoxin

## VIDAS® B•R•A•H•M•S PCT™

Reference number	30450
Tests / kit	60
Time to result	20 minutes
Sample type	Serum, Plasma (Lithium heparinate)
Sample volume	200 µL
Measuring range	0.05 - 200 ng/mL
Calibrators & Controls frequency	Every 28 days

### IMPORTANT INFORMATION

VIDAS® B•R•A•H•M•S PCT™ (PCT) is not indicated to be used as a standalone diagnostic assay and should be used in conjunction with clinical signs and symptoms of infection and other diagnostic evidence. Decisions regarding antibiotic therapy should NOT be based solely on procalcitonin concentrations. PCT results should always be interpreted in the context of the clinical status of the patient and other laboratory results.

### REFERENCES

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