BIO TECHNOLOGY boditech

Time to Join Antibiotic Stewardship

Boditech **AFIAS PCT Plus**

POC solution for using antibiotic in pediatric
And other biomarkers for children health care

Find out more on www.boditech.co.kr

The Challenge

Fever is one of the most frequent reasons for pediatric emergency consultations and requires special attention. In the group the source of the febrile syndrome is often unidentified, and it is not always possible to differentiate between invasive and noninvasive bacterial infections with information provided by medical history and physical examination. [1]

> “Pediatric Departments are faced with a need to provide early diagnosis of these potentially severe or invasive infections in daily clinical practice.

Antibiotics are commonly prescribed in hospital. It has been reported that the average proportion of children in hospital who received at least one antibiotic is between 33% and 78%. Many children receive antibiotic prescription indicating an incorrect total daily dosage or fractioning or for a significantly longer period of time than needed. [2]

Antibiotic abuse and misuse is leading to

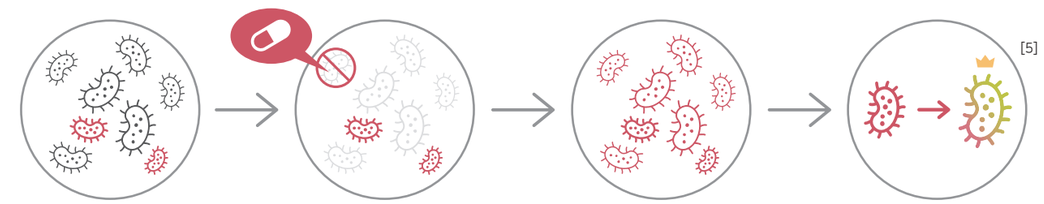
- Multidrug resistant bacterial
- Antibiotic-related adverse events
- Increased patient mortality
- Increased healthcare costs
- Negative impact on microbiota
- Undertreatment risk

⚠ WARNING

CDC estimates that U.S. doctor's offices and departments prescribe about 47 million antibiotic courses each year for infections that don't need antibiotics. [3]

How does antibiotic resistance occur?

- Germ always look for ways to survive and resist new drugs.
- The duration of resistance bacterial incidence is getting shorter.
- Experts say that by 2050 it could be a bigger killer than cancer, with 10 million deaths predicted.[4]



[5]

High number of bacteria. A few of them are resistant to antibiotics.

Antibiotic kill bacteria causing the illness, as well as good bacteria protecting the body from infection.

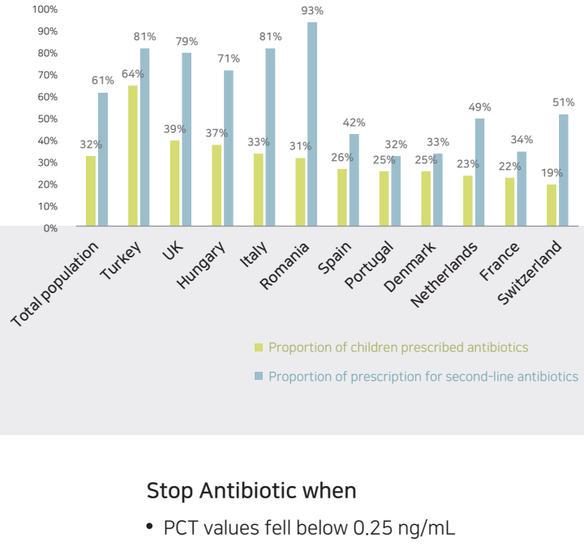
The resistant bacteria now have preferred conditions to grow and take over.

Bacteria can even transfer their drug-resistance to other bacteria, causing more problem.(by mutation)

Children in danger

- Identification of viral or bacterial infection is more complicated in children than in adults.
- Children receive more unnecessary antibiotics.
- Children have a higher risk of antibiotic-related adverse events than adults. [6]

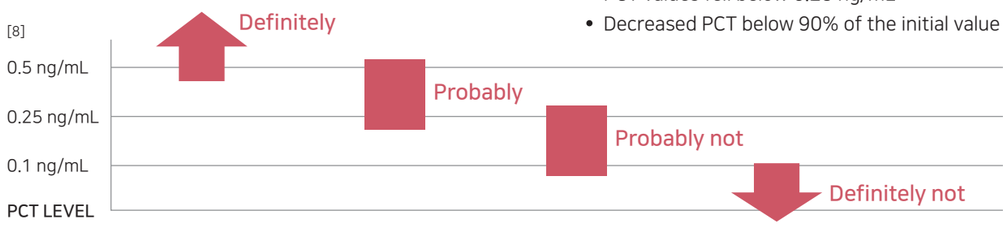
There is significant different of antibiotic use rate among countries and hospitals [7]



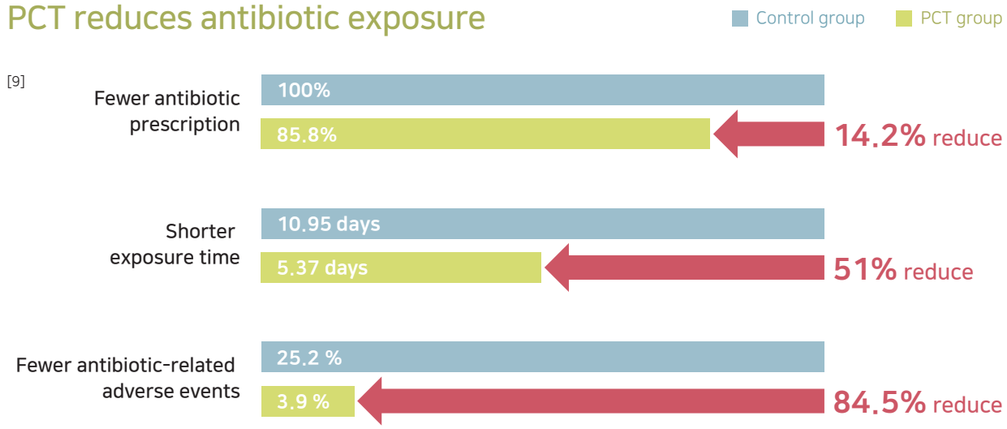
PCT guidance for antibiotic

Stop Antibiotic when

- PCT values fell below 0.25 ng/mL
- Decreased PCT below 90% of the initial value



PCT reduces antibiotic exposure



It's time to Join Antibiotic Stewardship with **Boditech Med PCT Plus**

NO MORE SUFFERING!

High sensitivity for detecting local bacterial infection

Boditech Med PCT Plus Improve sensitivity

High sensitivity fluorescence technology can detect 0.02-50 ng/mL range of PCT level, ideal for detecting local bacterial infection to prescribe children antibiotics.

NO MORE CRYING!

Simple and safe blood collection with a drop of finger blood

Boditech Med PCT Plus innovate technological advance

PCT measurement in small amount whole blood without sample pretreatment can help reduce children phobia of blood collection.

NO MORE WAITING!

Test result within 12 minutes in site

Boditech Med PCT Plus
- point of care system

Compact automated device show result directly in site.
Doctor can write prescription without delay with reliable test result.

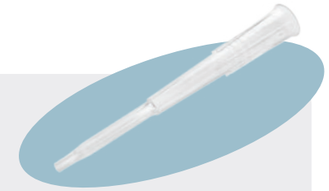
NO MORE WASTING!

No extra cost and calibration loss

Boditech Med PCT Plus save cost

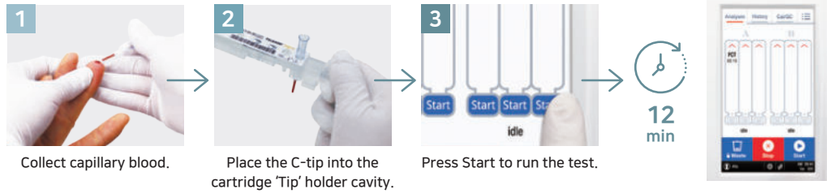
Test cartridge system can help calibration without daily cartridge loss.
No extra cost for accessories or other options.

C-tip: 30 µL capillary blood from finger



The C-tip is a unique Invention of Boditech Med Inc.

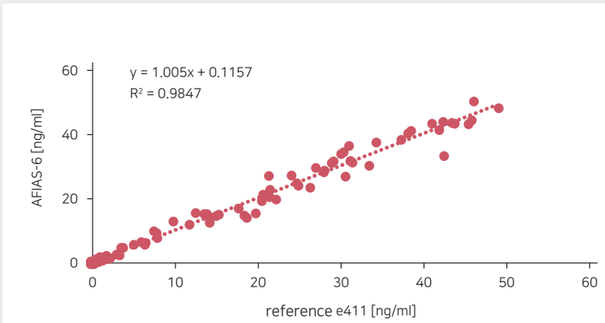
- Collect small volume of whole blood from children's finger or infant's heel.
- Test automatic system directly.



Collect capillary blood. | Place the C-tip into the cartridge 'Tip' holder cavity. | Press Start to run the test.

Reliable result

AFIAS PCT Plus show reliable test result as laboratory method.



Specification

AFIAS PCT Plus	
Sample type	WB/S/P
Sample volume	100 µL (30 µL for C-tip)
Assay time	12 min
Working range	0.02-50 ng/mL
Storage	2-8℃
Shelf time	20 months
Accuracy	Y=1.005x + 0.1157 / R=0.9847

AFIAS PEDIATRIC test items

- Whole blood
- Feces
- Nasal swab
- C-tip

Infection

Virus infection &
Bacterial infection

- Rota
- Noro
- Adeno
- Anti-HBs
- HBsAg
- Anti-HCV
- Rota/Adeno combo

Inflammation

Antibiotic prescription
SIRS sepsis
Neonatal sepsis
LRTI (Lower Respiratory tract Infection)
Pneumonia

- PCT
- IL-6
- CRP

Cardiac

Cardiac disease & surgery
Acute myocarditis
Cardiomyopathy

- TnT
- NT-proBNP
- BNP
- CK-MB
- D-Dimer
- Myoglobin
- hsCRP
- ST2
- Cardiac Triple
  (TnI, CK-MB, Myoglobin)

Vitamin D

Children's immune
system & bone health

- Vitamin D (S/P)

Autoimmune

Juvenile Idopathic
Arthritis
& allergic disease

- Anti-CCP Plus

AFIAS-1

A compact immunoassay analyzer with the all-in-one cartridge system

- Automated POCT system with All-in-one cartridges
- Easy to use with proprietary C-Tips (for fingertip blood)
- Quick test results with reliability
- Small, compact & light

AFIAS-6

Automated Immunoassay Analyzer with the all-in-one cartridge system

- Automated POCT system with All-in-one cartridges
- Easy to use with proprietary C-Tips (for fingertip blood)
- Up to 6 different parallel tests
- US FDA 510(K) cleared

AFIAS-3 / AFIAS-10

Coming soon

References

1) Anna Fernandez Lopez, et al. Procalcitonin in pediatric emergency departments for the early diagnosis of invasive bacterial infections in febrile infants : results of a multicenter study and utility of a rapid qualitative test for this marker, The Pediatric Infectious Disease Journal, 2003:22:895-903

2) Nicola Principi and Susanna Esposito, Antimicrobial stewardship in paediatrics, BMC Infectious Diseases, (2016) 16:424

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4) Antimicrobial Resistance : Implication and Costs, 2019, Porooshat Dadgostar

5) St.George's University of London, https://www.sgul.ac.uk/research/our-impact/transformation-stories/tackling-the-challenge-of-antimicrobial-resistance-in-children-and-babies

6) Nicola Prinicipi, et al, Antibiotic-related adverse events in paediatrics : unique characteristics, Expert Opinion on Drug Safety, 2019

7) Josephine van de Maat, et al, Antibiotic prescription for febrile children in European emergency departments : a cross sectional, observational study, Lancet Infectious Disease, 2019;19:382-91

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9) Susanna Esposito, at el, Procalcitonin measurements for guiding antibiotic treatment in pediatric pneumonia, Respiratory Medicine, (2011) 105, 1939-194

10) Anna Fernandez Lopez, MD, C, et al, Procalcitonin in pediatric emergency departments for the early diagnosis of invasive bacterial infections in febrile infants, Pediatric Infectious Disease Journal, 2003:22:895-903

11) Shereya Agarwal et al, Antibiotic Use and Misuse in Children: A knowledge, Attitude and Practice Survey of Parents in India, Journal of Clini9cal and Diagnostic Research, 2016 Nov. Vol-9(11):SC21-SC24

12) Rizky Abdulah, Antibiotic Abuse in Developing Countries, Pharmaceutical Regulatory Affair, 2013, 1:2

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