

25. TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI KONGRESİ

24-27 NİSAN 2025
PINE BEACH BELEK / ANTALYA

Antimikrobiyal Direnç Çağında Bağışıklığı Baskılanmış Hasta: Acil Servisten Yoğun Bakıma Enfeksiyon Yönetimi

TANIDA YENİLİKÇİ YAKLAŞIMLAR



NIÇG

KLİNİK DERNEĞİ NAKİL
İNFEKSİYONLARI ÇALIŞMA GRUBU

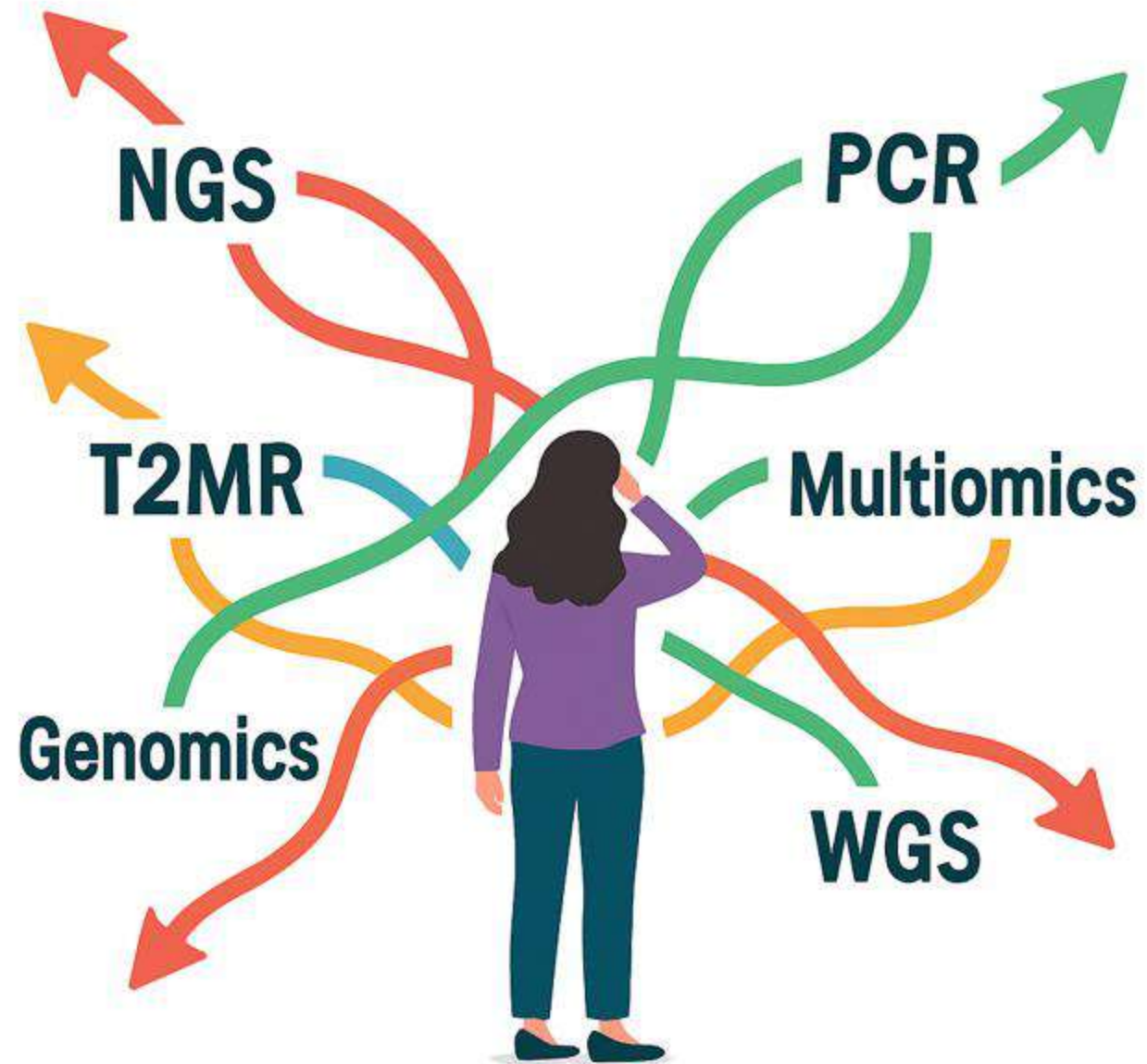
Dr. İmran Hasanoğlu
Ankara Bilkent Şehir Hastanesi

Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji



NIÇG

KLİNİK DERNEĞİ NAKİL
İNFEKSİYONLARI ÇALIŞMA GRUBU



SUNUMDA...

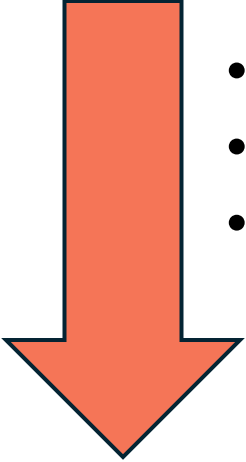
Olanlar

Klinisyen gözünden..
İmmunsuprese hasta
Bize yeni gelenler
Gelecekler

Olmayanlar

Sendromik testler
CMV Tanısal Yenilikler
Uzun süredir kullanımda olan
tetkiklerin yeni uygulamaları
(IFD'da PET CT)

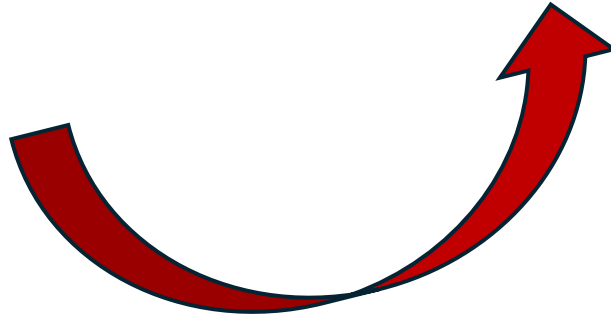
İmmünespresif hasta



- altta yatan immün yetmezlik
- antimikrobiyal profilaksi
- sorumlu patojenler

**Klinik bulgular
Tanı**

Saatler çok önemli



**Yüksek duyarlılık
Hızlı
Maliyet etkin
Uygulaması kolay**



RISK:

INFECTION

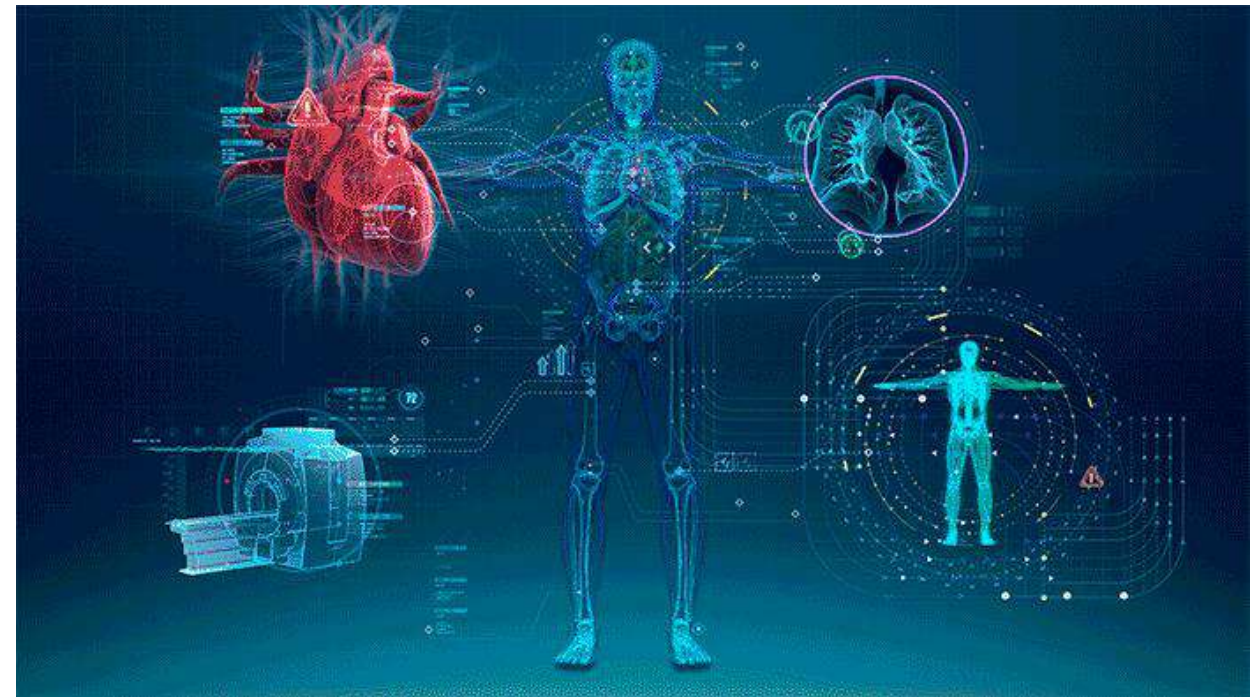
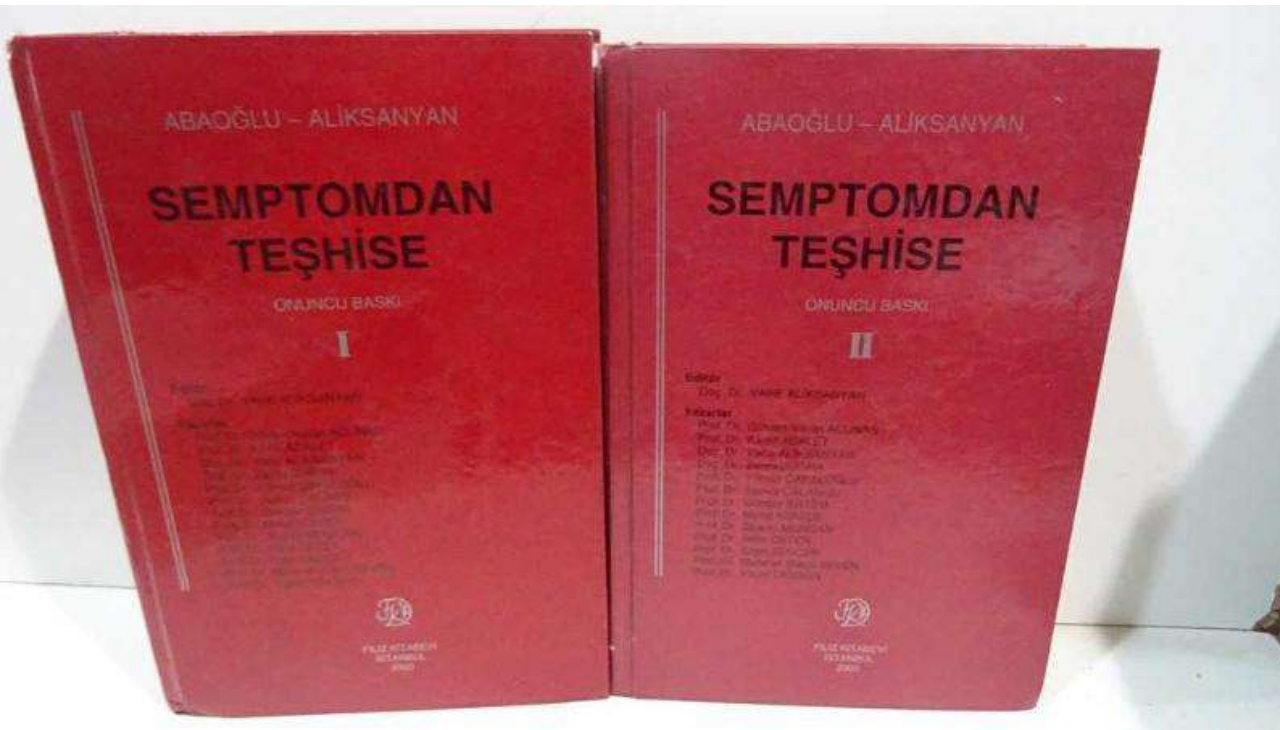


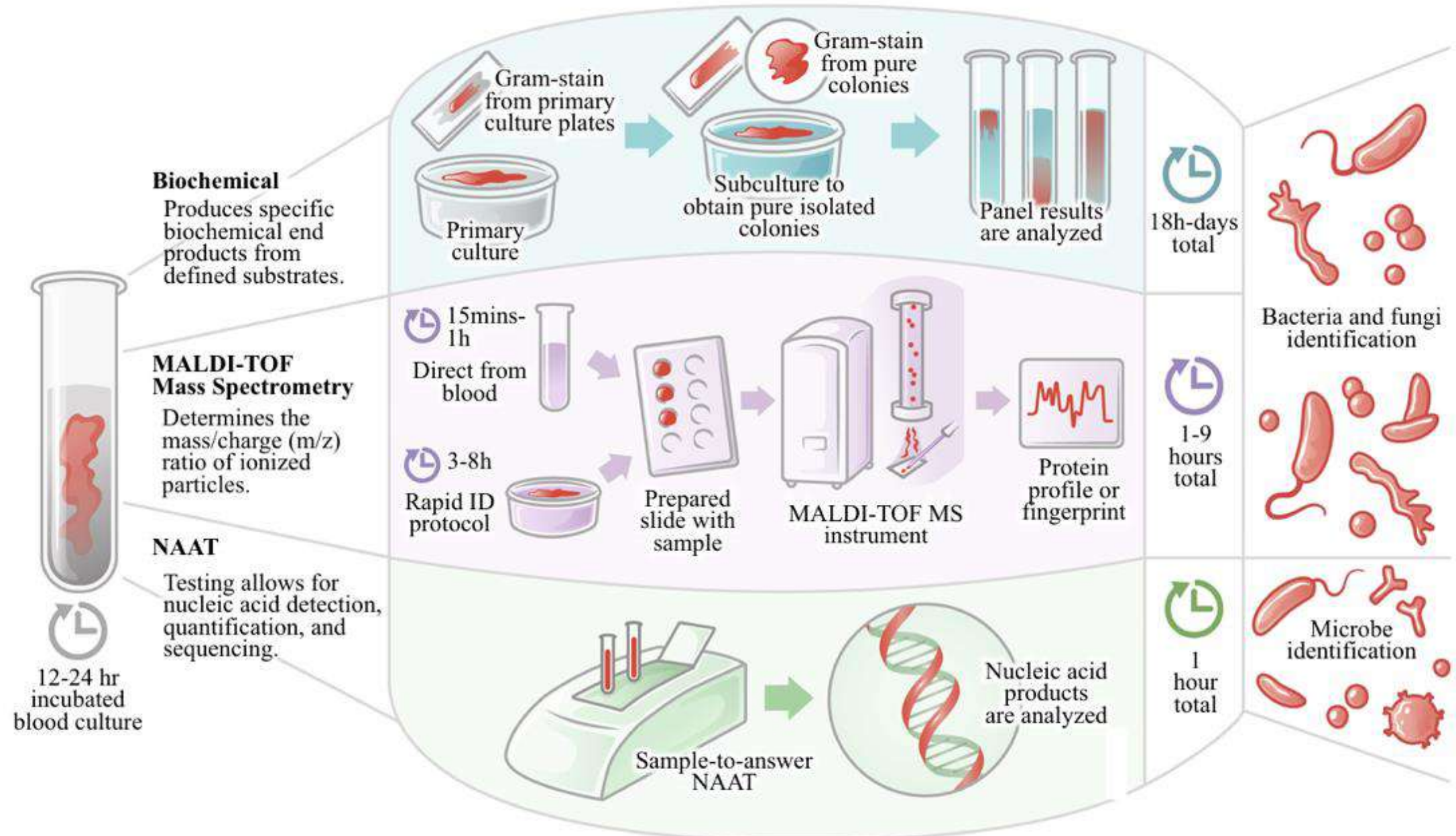
HEART OR BRAIN
COMPLICATIONS



DEATH







Avantajlar

Dezavantajlar

Kültür

Yaygın olarak erişilebilir
Ucuz
Temel ekipman yeterli

Zor üreyen bakteriler
Her mikroorganizma için özel ortam gerekebilir
Uzun süre

PCR

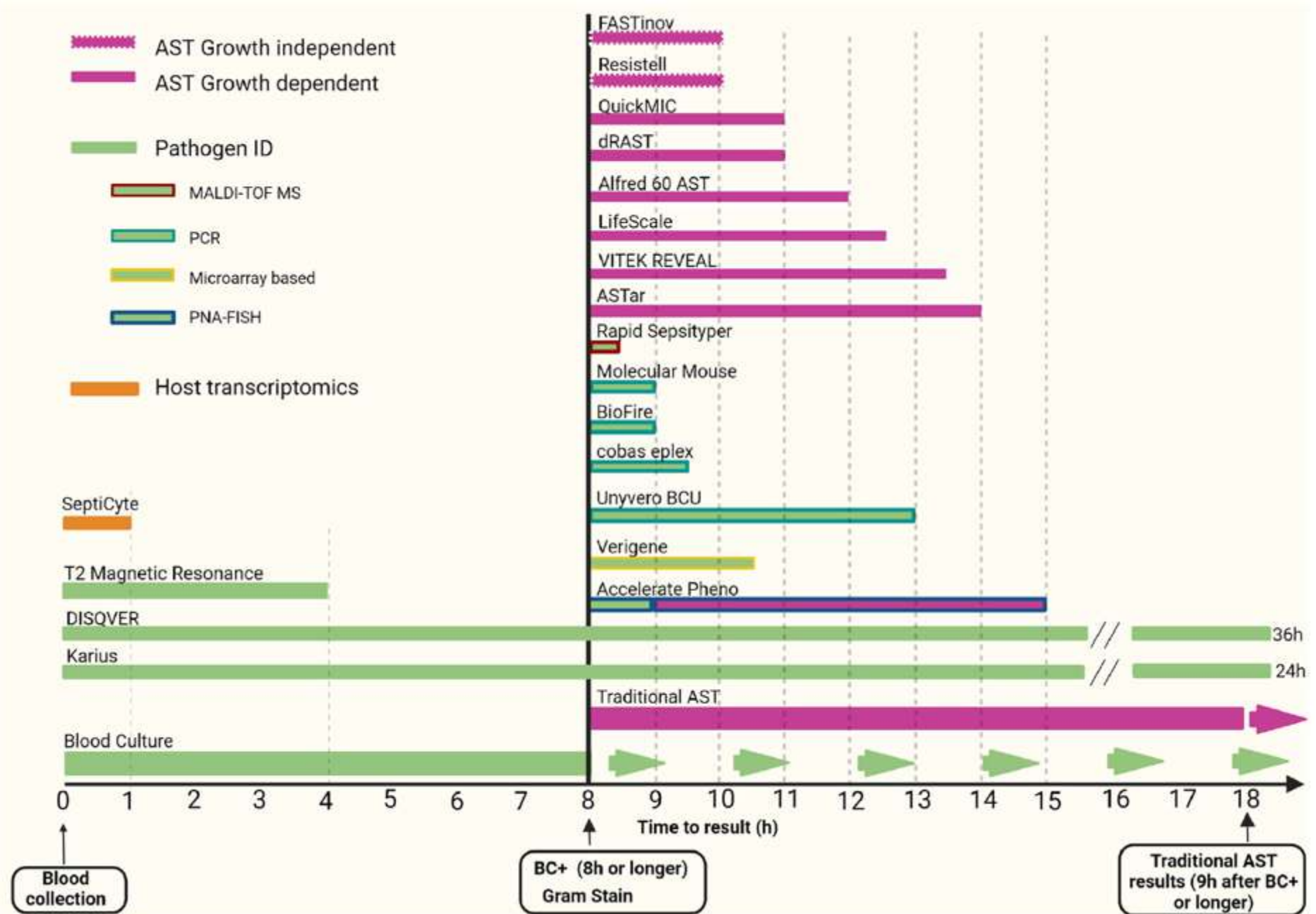
4–8 saat içinde hızlı sonuç
Nadir organizmaların saptanması
Tek örnekten birden çok hedefe yönelik test
Kültür testlerinden daha duyarlı

Kültür testlerinden daha pahalı
Spesifik primer tasarımı ve hedef organizma listesi gerekir
MIC ölçülemez

Genomik teknolojiler (NGS vb)

Kültür ve izolasyon gerektirmeden patojen tanımlama
Yavaş büyüyen patojenlerin tanı ve tiplendirme süresi azalır
Salgın kümelerinin daha hızlı tanımlanması
Yüksek duyarlılık ve özgüllük

Kültür testlerinden daha pahalı
Gelişmiş ekipman ve eğitilmiş personel ihtiyacı
MIC ölçülemez





Time Efficiency in Tailoring Antimicrobial Treatment: A Propensity Score-Matched Comparison of Sepsis Panel-Guided and Blood Culture-Guided Therapy

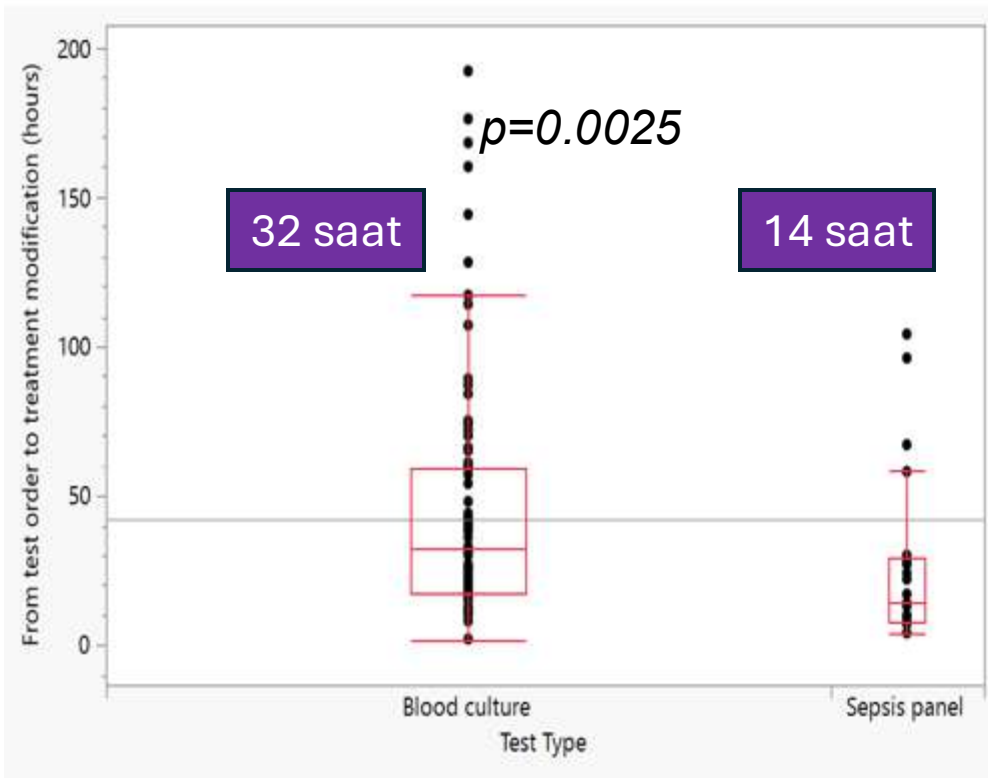


Figure 2. Time from test order to treatment modification

971 hasta (44.6% SP vs 55.4% BC)

YBU ihtiyacı
Mekanik ventilasyon
Mortalite



I. Hasanoglu¹, R. Guner¹, F.G. Aslan², M. Korkmaz², A. Kaya¹, B. Kayaaslan¹, F. Eser¹, F. Horan³, M. Meral², B. Dinc²

The Rise (And Fall?) of Genomics: The Omics Revolution



The 'Omics' World

Since the advent of genomic sequencing technologies and subsequent release of reference genome sequences, the broader biological community has realized that this will be an organizing science for decades to come. Those other areas have now adopted the suffix 'omics' to many of their genomic related activities. Here are examples.

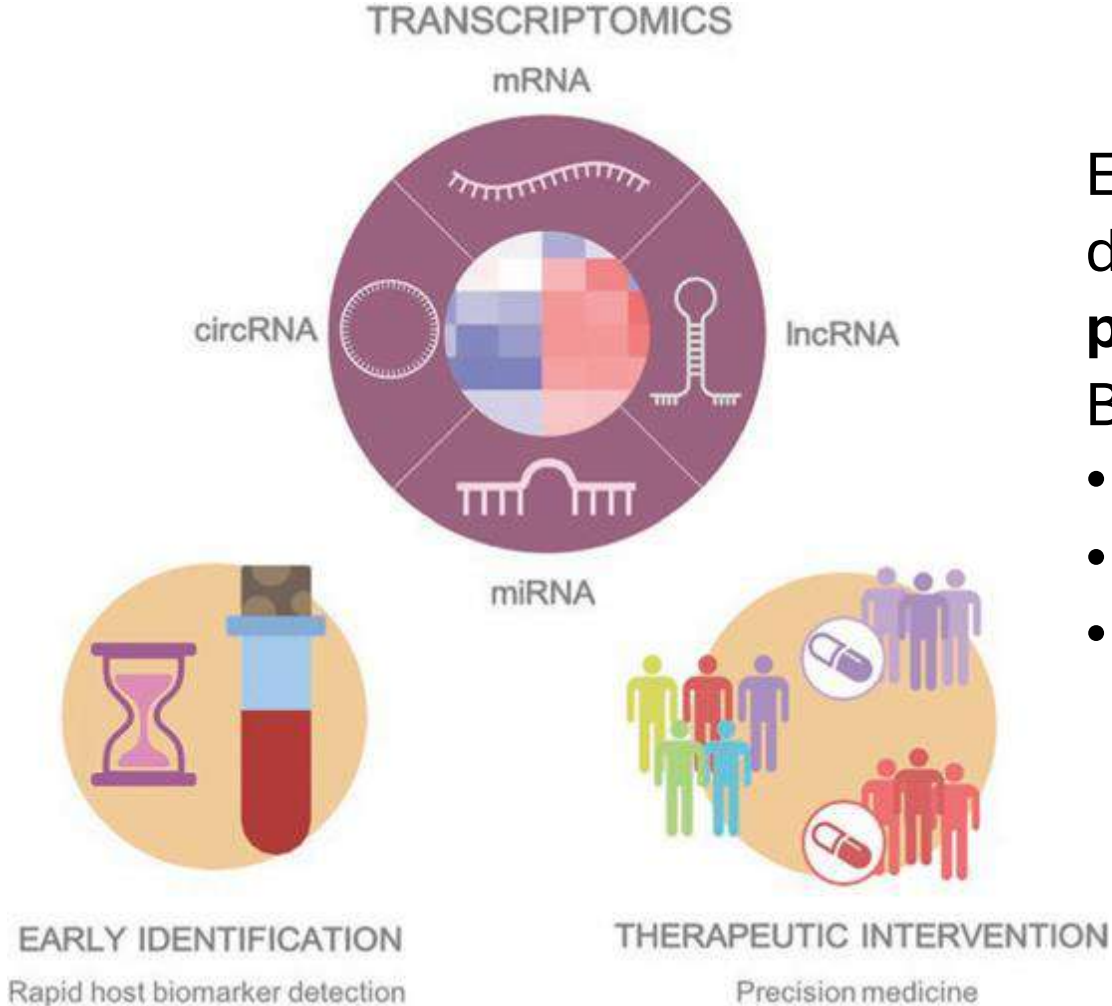
Traditional Terms

Term	Definition: "the study of .."
Genomics	All of the genes in the genome; a general term for all studies involving many genes and their products
Transcriptomics	The expressed mRNAs
Proteomics	The proteins in the organism
Metabolomics	The metabolites that result from the expression of proteins and genes
Ionomics	The uptake and distribution of ions in the organism
Pharmacogenomics	The genes and proteins in relation to drug development
Phenomics	The many phenotypes and their interactions during the life cycle of an organism

Term	Definition: "the study of .."
Epigenomics	The factors, other than the gene sequence, that control gene expression
Glycomics	The expression of sugars in an organism
Histomics	Histones and their role in life cycle of a genome
Kinomics	Kinases and how they regulate the development of an organism
Immunogenomics	The genes and factors that regulate the immune system
Interactomics	The genes and other factors that regulate the networks that exist between genes and proteins
Lipidomics	The expression of lipids in an organism
Metallomics	The genes and other factors that regulate uptake and distribution of metals in an organisms
Methylomics	The role of methylation in gene expression
Mitochondriomics	The genes involved in mitochondria function
Neuromics	The genes and factors underlying neuron function
Phylogenomics	The evolution history of a taxa using large scale sequence data
Physiomics	The genes controlling the physiology of an organism



Konak Transkriptomics



Enfeksiyon, inflamasyon veya immün yanıt gibi durumlarda **konak hücrelerin gen ekspresyon profili** değişir.

Bu değişimleri analiz ederek:

- **Bakteriyel mi viral mi?**
- **Hastalık şiddeti veya prognoz tahmini**
- **Bireyselleştirilmiş tedavi kararları**

Application of Mass Cytometry Platforms to Solid Organ Transplantation

Wenming Zhang, PhD,¹ Ayantika Sen, PhD,¹ Josselyn K. Pena, BS,¹ Andrea Reitsma, MS,¹ Oliver C. Alexander, BS,^{1,2} Tetsuya Tajima, PhD,¹ Olivia M. Martinez, PhD,¹ and Sheri M. Krams, PhD¹

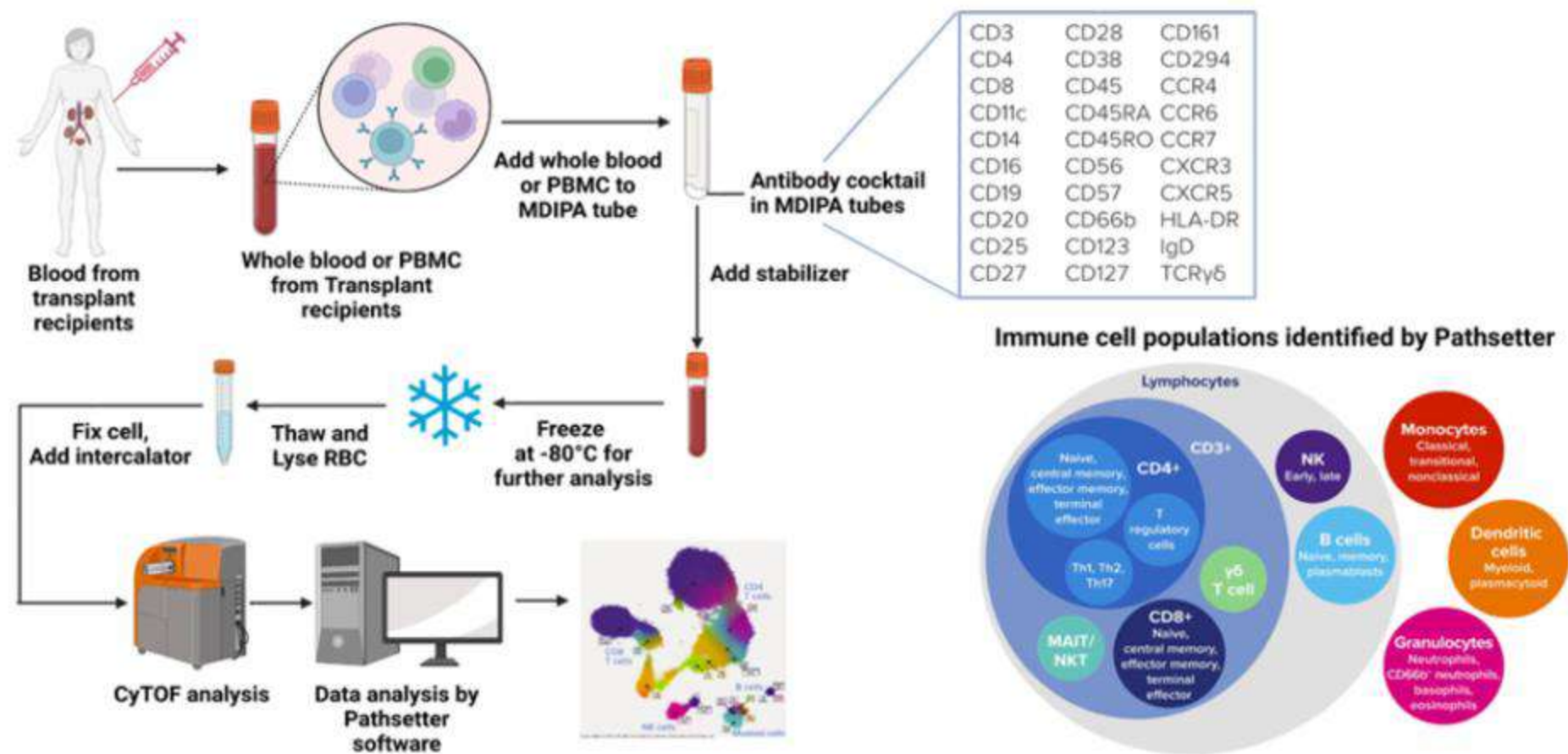


FIGURE 2. Schematic diagram of MDIPA workflow: whole blood or PBMCs are added to MDIPA tubes containing a 30-marker panel of lyophilized antibodies for phenotyping immune cells. If samples are to be frozen and transported, the SMART TUBE stabilizer is added.

REVIEW

Pathogen-agnostic immune biomarkers that predict infection after solid organ transplantation

Hannah Imlay¹ | Allan M. Seibert^{1,2} | Kimberly E. Hanson^{1,3}

Konak transkriptomları, patojen kimliği ve antimikrobiyal duyarlılık sonuçları için hızlı testlerden en fazla yararlanacak hastaları belirlemeye yardımcı olmak için bir triyaj aracı olarak yararlı olabilir

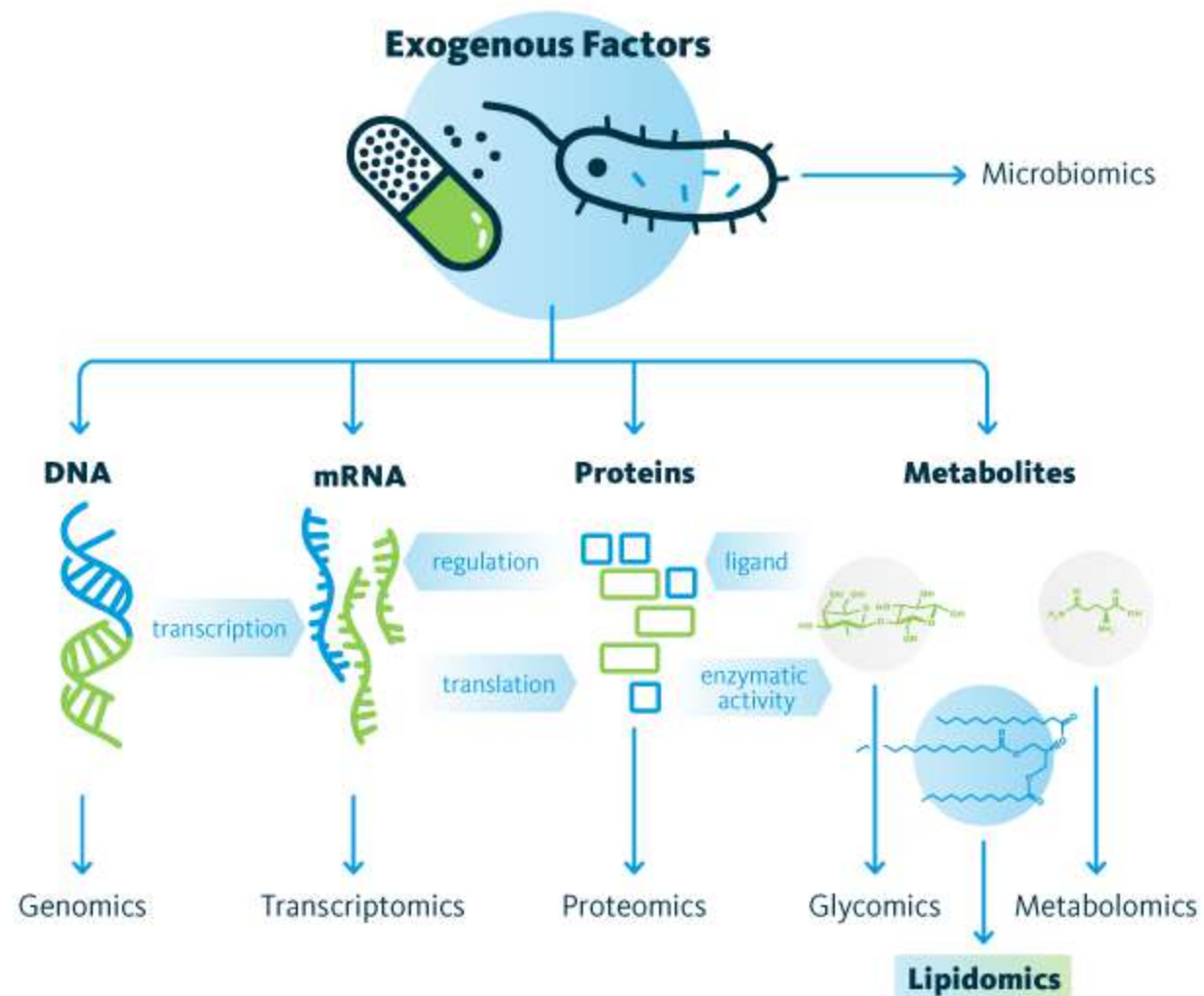


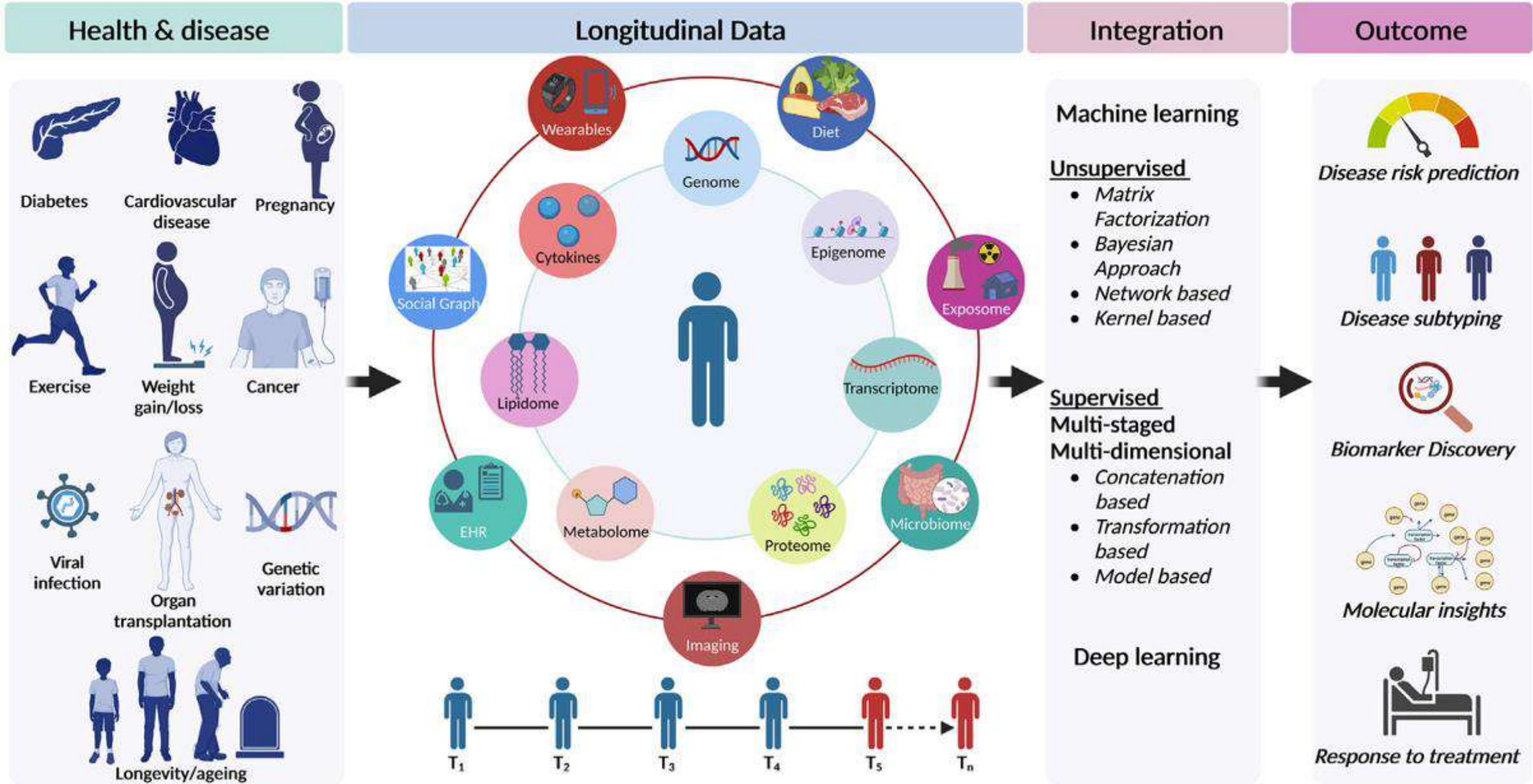
> [Transpl Infect Dis. 2022 Oct;24\(5\):e13971. doi: 10.1111/tid.13971.](#)

Could cell-free DNA and host biomarkers assist in antimicrobial stewardship with organ transplant recipients?

Sandy Y Chang¹, Carlos A Q Santos²

Multimomics integrates multiple omics datasets







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MIN

Metagenomic Sequencing as a Pathogen-Agnostic Clinical Diagnostic Tool for Infectious Diseases: a Systematic Review and Meta-analysis of Diagnostic Test Accuracy Studies

- “**Agnostik metagenomik analiz**”, klinik örneklerde (kan, BOS, balgam, idrar vb.) bulunan tüm genetik materyalin önceden herhangi bir patojen varsayımı olmadan analiz edilmesidir
- Hangi mikroorganizmayı aradığını bilmeden, örnekte bulunan tüm DNA/RNA dizilerini analiz eder.
Bu nedenle “agnostik” (tarafsız/bilinçsiz/taraf belirtmeyen)

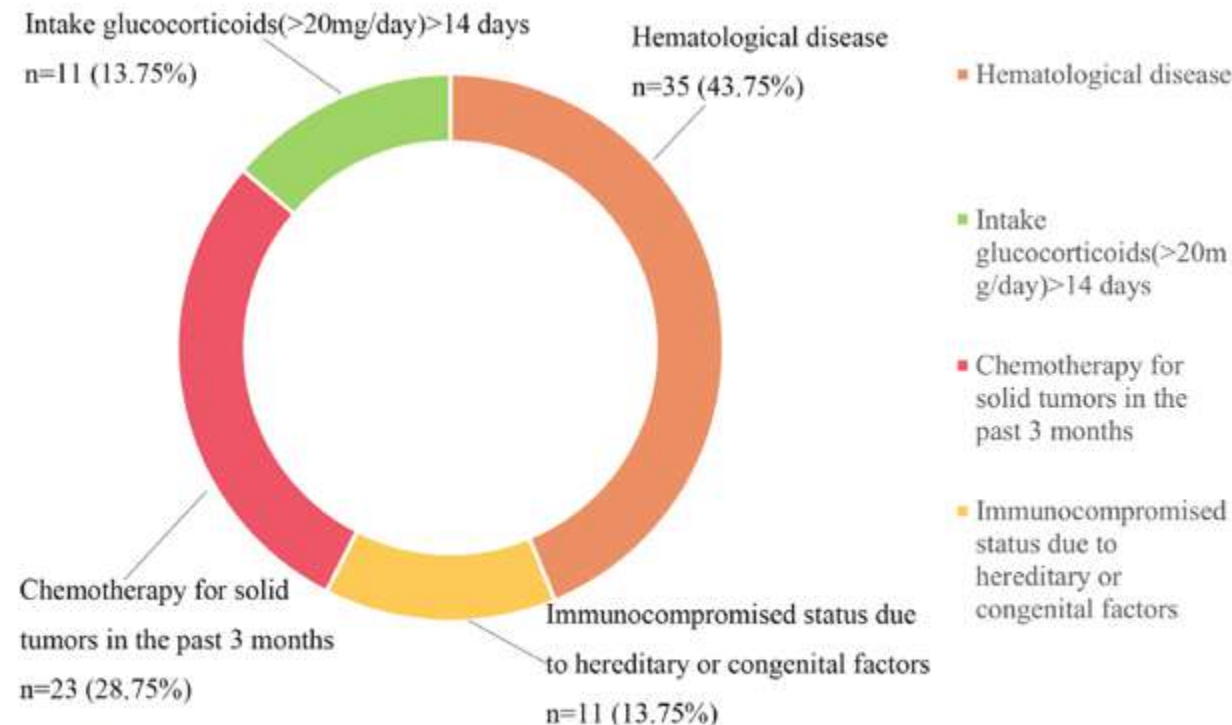
RESEARCH

Open Access



The clinical application of metagenomic next-generation sequencing in immunocompromised patients with severe respiratory infections in the ICU

Junjie Zhao¹, Yong Sun¹, Jing Tang¹, Kai Guo¹, Kaiyu Wang², Jiancheng Zhuge^{3*} and Honglong Fang^{2*}



2 The distribution of immunocompromised status in immunocompromised patients

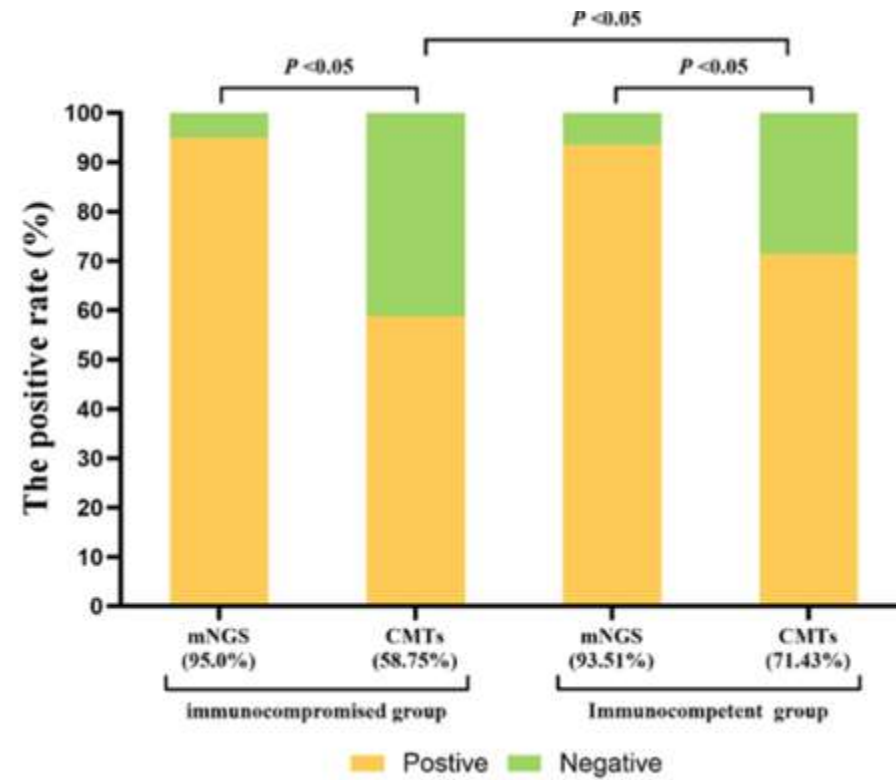


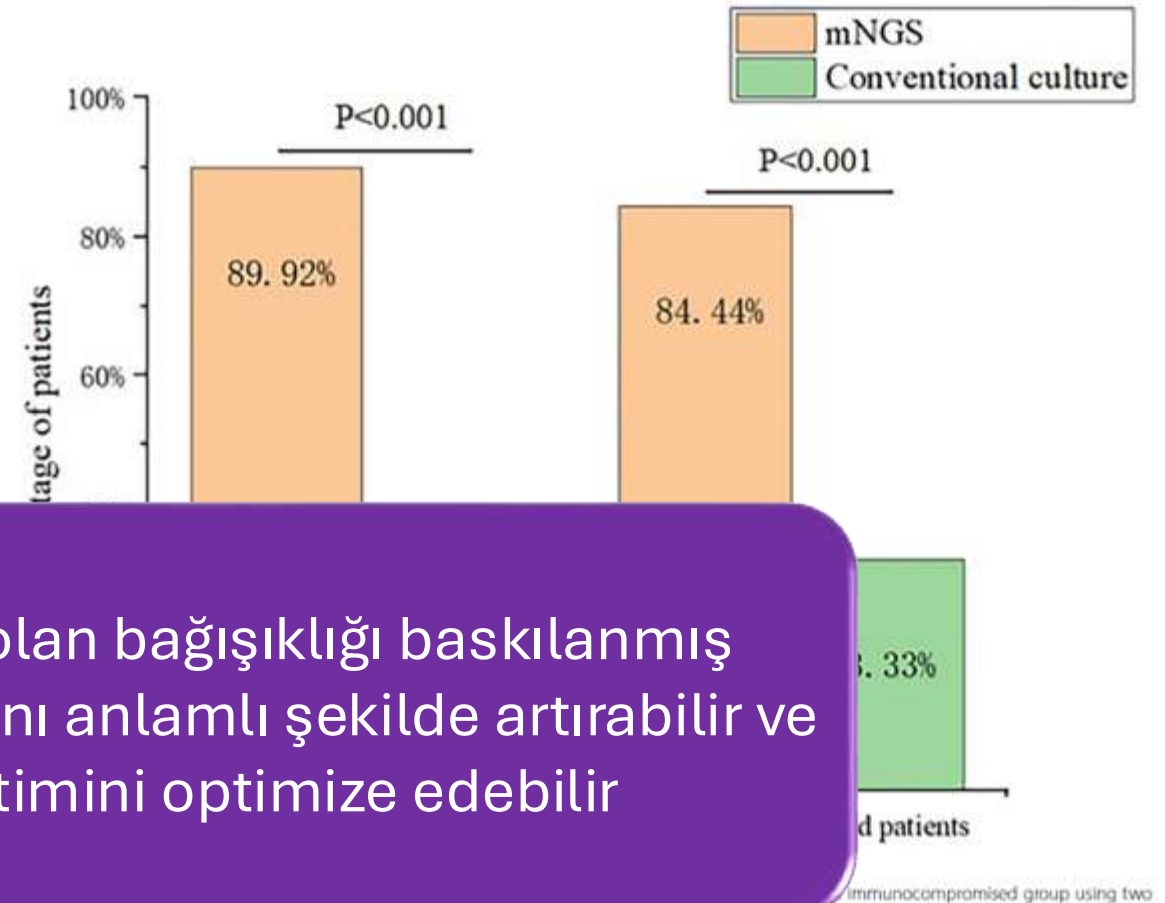
Table 4 The Clinical effect of mNGS result in immunocompromised group

Clinical effect	Role of mNGS result	Treatment changes owing to mNGS
Positive effect (n = 68, 85.0%)	Contributed to definitive diagnosis (n = 68, 85.00%)	Antibiotic treatment adjustment (n = 56; 70.0%) Empirical treatment continued (n = 12; 15.0%)
Negative effect (n = 2, 2.5%)	mNGS results led to incorrect diagnoses (n = 6, 7.5%)	Incorrect antibiotic treatment
No effect (n = 10, 12.5%)	Negative mNGS results (n = 4, 5.0%)	No changes
	Results deemed false or insignificant (n = 6, 7.5%)	No changes

Antimicrobial strategies of lower respiratory tract infections in immunocompromised patients based on metagenomic next-generation sequencing: a retrospective study

Beibei Meng ^{# 1 2}, Haichao Liu ^{# 2}, Qinliang Wu ³, Lei Qu ², Congzheng Mao ², Fang Yang ², Tianzhou Lan ^{1 2}, Juan Fang ^{1 2}, Zhenhong Hu ^{4 5}, Yao Fang ^{6 7}

Eskalasyon immünsuprese grupta daha sık
(%49,00 vs %31,00; P = 0,018)
De-eskalasyon açısından fark gözlenmedi
(%20,00 vs %15,00; P = 0,458)



Alt solunum yolu enfeksiyonu olan bağışıklığı baskılanmış hastalarda patojen saptama oranını anlamlı şekilde artırabilir ve antimikrobiyal tedavi yönetimini optimize edebilir

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[Our Clinics](#)

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Technology

One test to rule them all.

Metagenomic next-generation sequencing (mNGS) can potentially diagnose all infectious agents — viruses, bacteria, fungi, and



KARIUS | TEST
clarity at speed®

A Rapid Liquid Biopsy for Infectious diseases

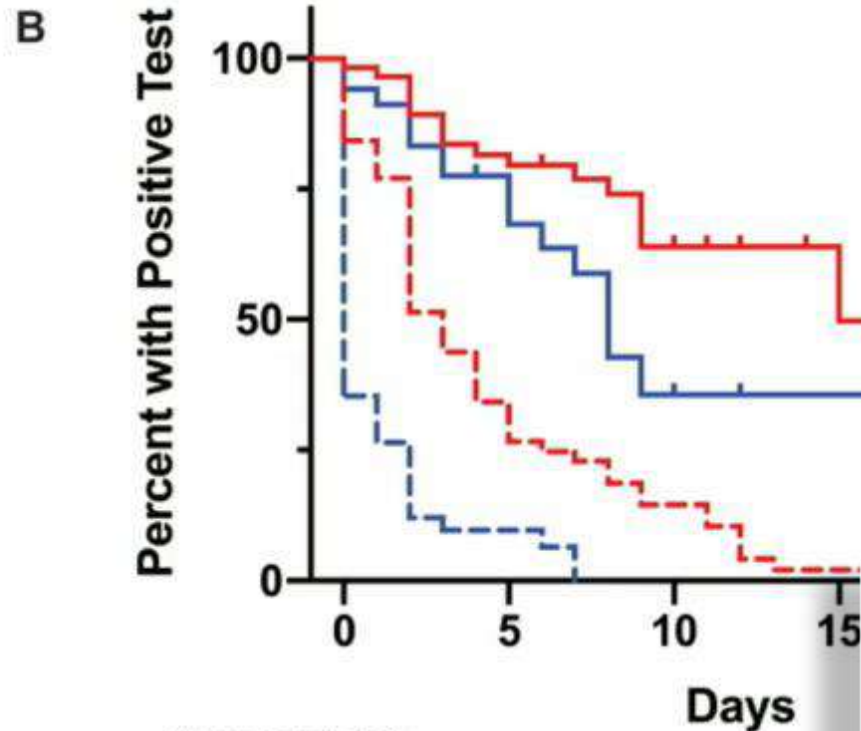
The Karius Test is a blood test based on metagenomic sequencing of plasma microbial cell-free DNA (mcfDNA) and utilizes a single blood sample to rapidly and non-invasively detect over 1000 pathogens associated with deep-seated and difficult-to-diagnose systemic infections. The Karius Test may help clinicians avoid many invasive, low-yield, and sequential diagnostic tests that can delay treatment for vulnerable hospitalized patients.



Metagenomik Yeni Nesil Sekanslama Klinik Deęeri

- Sık gör lmeyen mikroorganizmaları tanımlama potansiyeli
- Daha yüksek duyarlılık – antibiyotik tedavisi alan, yavaş  reyen ve k lt rde  retilmesi zor mikroorganizmalar i in
- Diren  genlerinin genotipik tahmini – yüksek genom kapsamı gerektirir
- Polimikrobiyal enfeksiyonlar – sınırlı klinik deneyim
- Sonu  s resinin kısa olması – antimikrobiyal tedavinin erken optimizasyonuna rehberlik edebilir

Cell-free DNA in bacteremia: a new marker for diagnostic?



Number at risk

--- BC S.a.	57	18	9	2
--- BC GN	68	5	0	0
— KT S.a.	57	40	13	9
— KT GN	68	25	4	2

- Cell-free DNA: short fragments of “floating” DNA which can be detected in the bloodstream
- 175 patients with *Staphylococcus aureus* bacteremia (n=66), Gram-negative bacteremia (n=74), or non-infected controls (n=35).
- Pathogenic **cfDNA** remained detectable for **significantly longer** than conventional blood cultures (median **15 days** vs 2 days; $P < .0001$); diagnostic a

Clinical Infectious Diseases

MAJOR ARTICLE

IDSA
Infectious Diseases Society of America

hivma
hiv medicine association

OXFORD

Microbial Cell-Free DNA Identifies Etiology of Bloodstream Infections, Persists Longer Than Conventional Blood Cultures, and Its Duration of Detection Is Associated With Metastatic Infection in Patients With *Staphylococcus aureus* and Gram-Negative Bacteremia

Plasma microbial cell-free DNA Metagenomic Sequencing for Diagnosis of Invasive Fungal Diseases Among High Risk Outpatient and Inpatient Immunocompromised Hosts

Results Sixty-five adult subjects with proven or probable IFD and 65 controls without IFD were included. Among IFD episodes *Aspergillus* was the most common pathogen (70.8%, 46/65), followed by Mucorales (10.8%, 7/65). Overall, sensitivity was 47.7% and specificity was 100%. Sensitivity varied based on disease certainty and pathogen, sensitivity was higher in proven versus probable IFD (60.0% vs 37.1%, respectively) and higher for subjects with invasive mucormycosis (100%) compared with aspergillosis (45.7%).

Conclusions A positive result by mcfDNA sequencing may reduce the need for invasive sampling in patients with suspected IFD. In this exploratory analysis, its high sensitivity and specificity for invasive mucormycosis suggests it could be useful for early treatment and intervention of this IFD. Future studies should focus on understanding how specific factors impact the sensitivity of mcfDNA sequencing for invasive aspergillosis.

Clinical Impact of Plasma Metagenomic Next-Generation Sequencing on Infection Diagnosis and Antimicrobial Therapy in Immunocompromised Patients

Guankun Yin,^{1,a} Yuyao Yin,^{1,a} Yifan Guo,^{1,a} Lingxiao Sun,¹ Shuai Ma,² Hongbin Chen,¹ Qi Wang,¹ and Hui Wang¹

¹Department of Clinical Laboratory, Peking University People's Hospital; and ²Institute of Medical Technology, Peking University Health Science Center, Beijing, China

Background. The clinical impact of plasma metagenomic next-generation sequencing (mNGS) on infection diagnosis and antimicrobial therapy in immunocompromised patients with suspected infection remains unclear.

Methods. Between March and December 2022, 424 cases with fever, infection history, mechanical ventilation, or imaging abnormalities underwent plasma mNGS testing at a single center. Eleven patients had received solid organ transplantation, and the remaining patients were categorized into febrile neutropenia (FN), non-neutropenia (NN), and non-transplant and non-hematologic disease (NTHD) groups based on immunosuppression severity. The diagnostic rate of infection and the utilization of antimicrobial agents based on mNGS were assessed.

Results. The use of mNGS significantly improved the diagnostic rates for fungi in the FN (65.1%, $P = .001$) and NN (58.8%, $P = .008$) groups versus the NTHD group (33.3%). Positive impacts associated with therapy were significantly greater than negative impacts across all 3 groups (all $P < .001$), and the utilization of escalation therapy was significantly more frequent in the FN group than in the NN group ($P = .006$). More than 70% of cases with negative mNGS results across the 3 groups underwent de-escalation therapy, with more than one third being discontinued, preventing antimicrobial overuse.

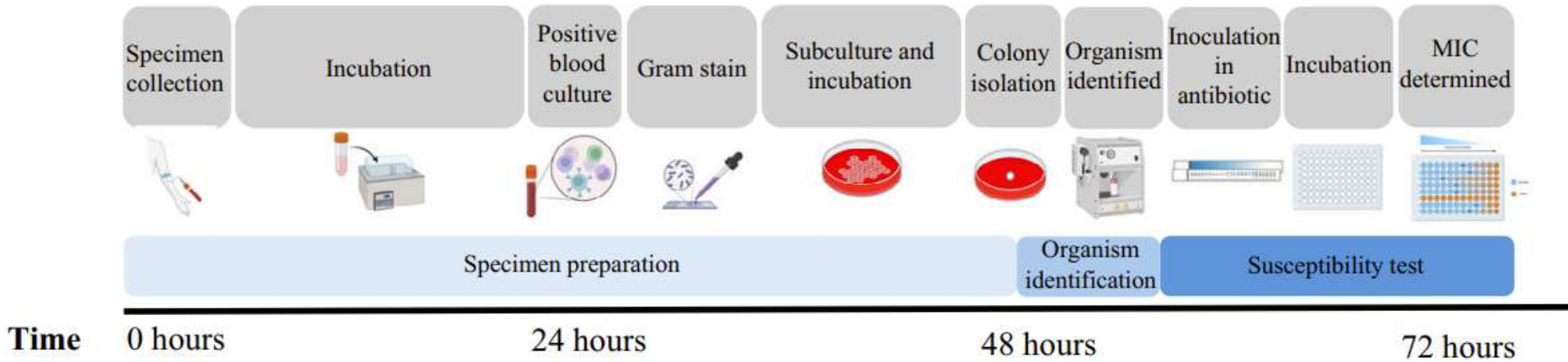
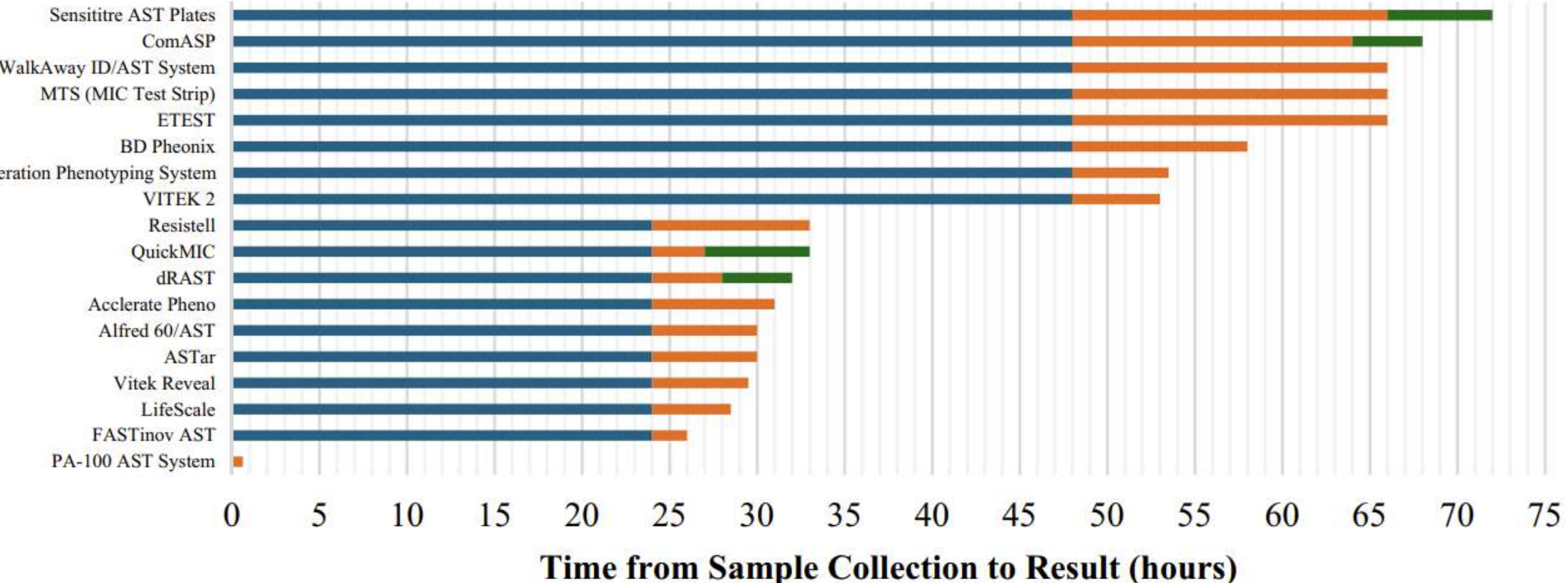
Conclusions. Plasma mNGS has a clinically confirmed positive impact in immunocompromised patients with neutropenia, improving the diagnosis of fungal infections and antimicrobial therapy.

Keywords. plasma metagenomic next-generation sequencing, immunocompromised, infection, clinical impact.

Next-generation rapid phenotypic antimicrobial susceptibility testing

Received: 22 March 2024
Accepted: 28 October 2024

Grace Resznetnik^{1,2}, Keely Hammond³, Sara Mahshid⁴, Tamer AbdelFatah⁵,
Dao Nguyen^{4,5,6}, Rachel Corsini⁶, Chelsea Caya⁶, Jesse Papenburg^{6,7},
Matthew P. Cheng^{3,6} & Cedric P. Yansouni^{3,6,8}



Blood culture-free ultra-rapid antimicrobial susceptibility testing

<https://doi.org/10.1038/s41586-024-07725-1>

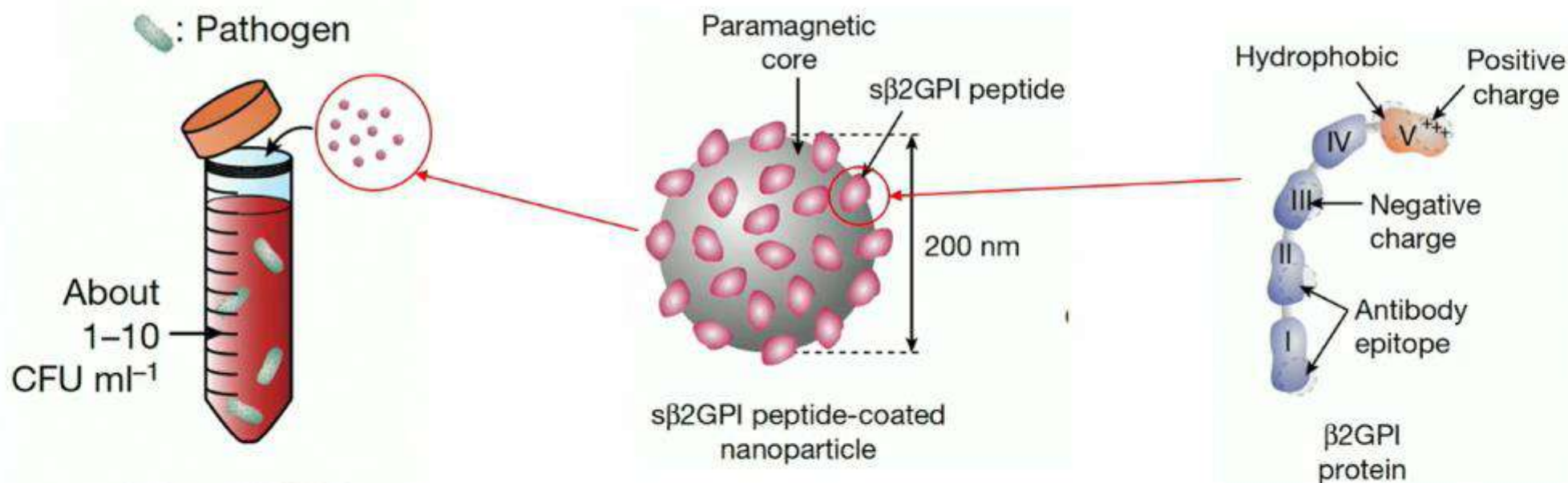
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Tae Hyun Kim^{1,2,3}, Junwon Kang^{1,4,5}, Haewook Jang^{1,3}, Hyelyn Joo², Gi Yoon Lee², Hamin Kim², Untack Cho⁶, Hyeon Bang⁶, Jisung Jang⁶, Sangkwon Han⁶, Dong Young Kim⁶, Chan Mi Lee⁶, Chang Kyung Kang⁶, Pyoeng Gyun Choe⁶, Nam Joong Kim⁶, Myoung-don Oh⁶, Taek Soo Kim⁶, Inho Kim^{6,7}, Wan Beom Park^{6,7} & Sunghoon Kwon^{1,2,3,4,5,6,7}

1st step : bacterial isolation using sβ2GPI peptide-coated nanoparticles



Inject sβ2GPI nanoparticles

β2GPI is an acute-phase plasma protein known to be involved in human innate immune responses that **naturally recognize common motifs of pathogen-associated molecular patterns**

T2MR® Technology

Redefining rapid, molecular diagnostics

T2 Biosystems tarafından geliştirilen, manyetik rezonans temelli bir moleküler tanı teknolojisidir. Özellikle:

- T2Candida**
- T2Bacteria**
- T2Resistance Panel** gibi panellerle tanınır.

1 CFU/mL kadar düşük düzeyde organizmaları tespit edebilir. Bu özelliği sayesinde, tam kan örneği kullanılarak düşük düzeyde patojenleri tespit edebilen FDA onaylı tek teknolojidir

T2MR® Technology

Redefining rapid, molecular diagnostics

T2Bacteria paneli, çoklu ilaç direnci ile ilişkilendirilen altı klinik olarak önemli bakteriyel patojeni (*E. faecium*, *S. aureus*, *K. pneumoniae*, *A. baumannii*, *P. aeruginosa* ve *E. coli* — kısaca ESKAPEc patojenleri) 3 ila 5 saat içinde tespit edebilir

Başlangıçta, panelde yer almasına rağmen *Acinetobacter baumannii* için FDA onayı alınamamış ancak Şubat 2024'ten sonra, bu organizmanın tespiti için de FDA onayı alınmıştır .



Tam kan örneğinde hedef patojenleri tespit etmedeki klinik performansı
değerlendiren çalışmalarda
duyarlılığı %83,3 - %100
özgüllüğü ise %90 -%100

Mylonakis et al., 2015 [20]	T2MR	Magnetic Resonance	28	Strong	Specificity and sensitivity of 99.4% and 91.1%, negative predictive values (99–99.5%), limitations include an inability to detect some clinically important Candida species (<i>C. guilliermondii</i> , <i>C. lusitanae</i> , <i>C. kefyr</i> and <i>C. auris</i>),
Clancy et al., 2018 [21]	T2MR	Magnetic Resonance	29	Strong	Sensitivity 89%, Specificity 98%

Bu nedenle, hedef mikroorganizmaları hızlı tespit etmek veya dışlamak için bir tarama testi olarak önerilebilir

Review > [Transpl Infect Dis.](#) 2022 Oct;24(5):e13899. doi: 10.1111/tid.13899.

Is diagnostic stewardship possible in solid organ transplantation?

Jennifer Husson ¹, Jacqueline T Bork ², Daniel Morgan ³, John W Baddley ²

Affiliations + expand

PMID: 36254510 DOI: [10.1111/tid.13899](#)

TRANSPLANT INFECTIOUS DISEASE



ORIGINAL ARTICLE

Rapid molecular testing for antimicrobial stewardship and solid organ transplantation

Ana D. Vega, Lilian M. Abbo 

Antimikrobiyal direncin Yapay Zeka ile Tahmini

O0382

CarbaDetector: An Artificial Intelligence-Driven Prediction Model for Detecting Carbapenemase-Producing Enterobacterales Using **Disk-Diffusion**



	Random forest expanded	CA-SFM algorithm	EUCAST screening
Sensitivity	96.1 % (94.4-97.8 %)	95.4% (91.9%-97.7%)	97.9 % (95.2-99.3 %)
Specificity	89.2 % (84.9-93.4 %)	40.1% (32.2%-48.5%)	8.2 % (4.3-13.8 %)
Youden index	0.853	0.355	0.061

P1519

Detection and differentiation of carbapenemases among Enterobacterales isolates using advanced system expert and new expertise rules of the **VITEK 2**



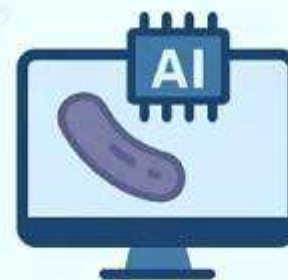
New expert rules to identify carbapenemase and discriminate among carbapenemase types

To AI	NOT to AI
Throughput or quality can be improved	Insufficient or poor quality data
Relationship of inputs to outcome cannot be perceived easily by humans	Rare diseases or situations requiring subjective clinical judgment
Narrow and well-defined problems	Insufficient infrastructure or technical resources (e.g. insufficient computing power, IT support)
Tasks requiring high accuracy in pattern recognition	No clear strategy or understanding of the operational context

Benefits of AI in Clinical Microbiology

- Laboratory operations improvements
 - Molecular interpretation tools
 - Image analysis for microscopy
 - Colony recognition
- AMR detection and outbreak investigations
- Contribute to standardization and reduce subjective interpretation
- Combat workforce challenges

AI Tools in Clinical Microbiology



Diagnosis



Image Analysis



Clinical
Decision Support

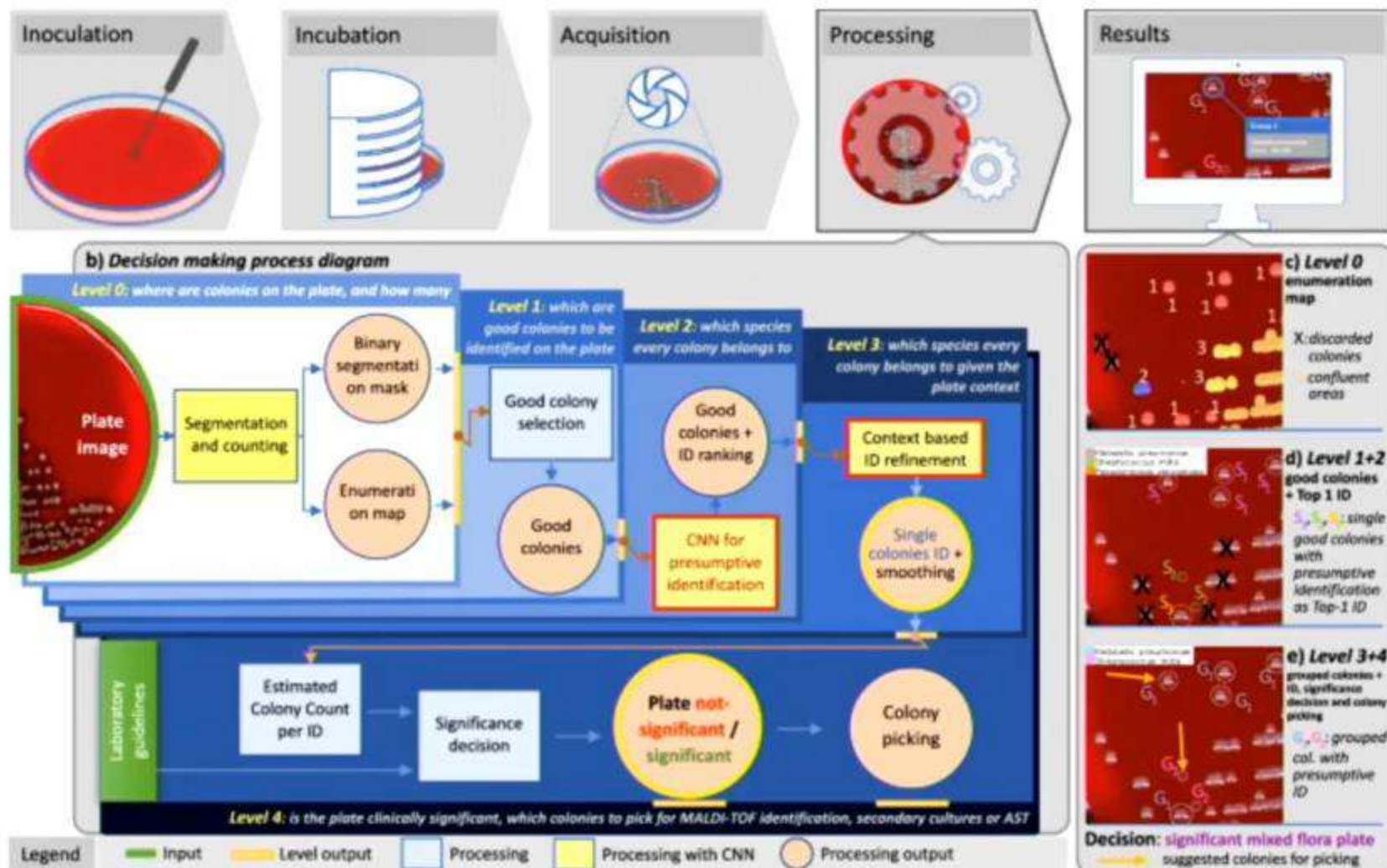


Large-Scale
Surveillance

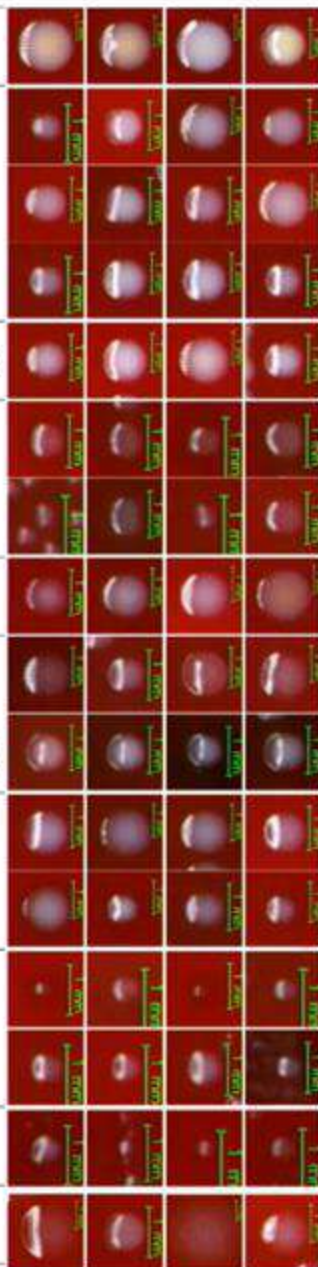


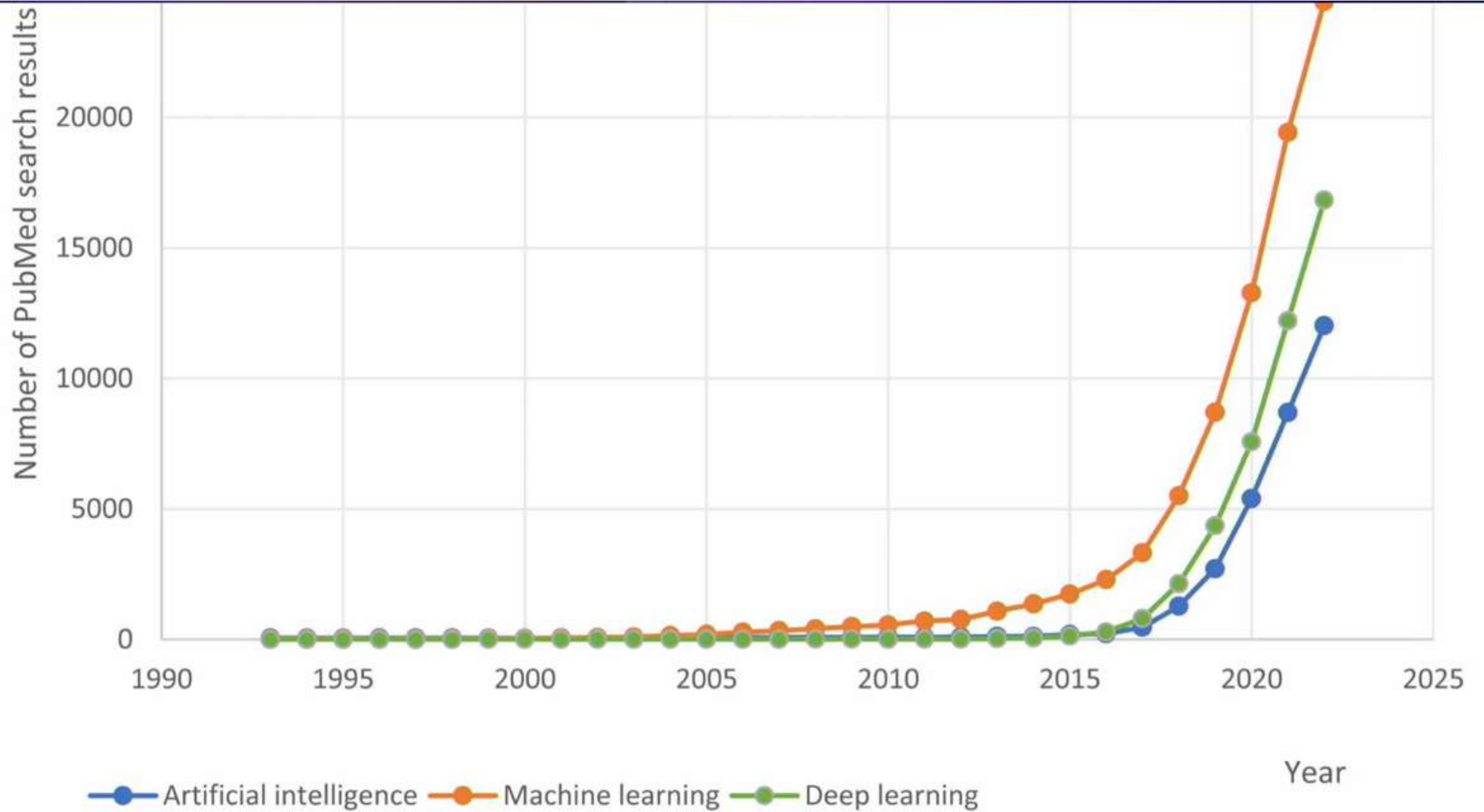
Predictive Modeling

AI Image Analysis for Culture Plate Interpretation

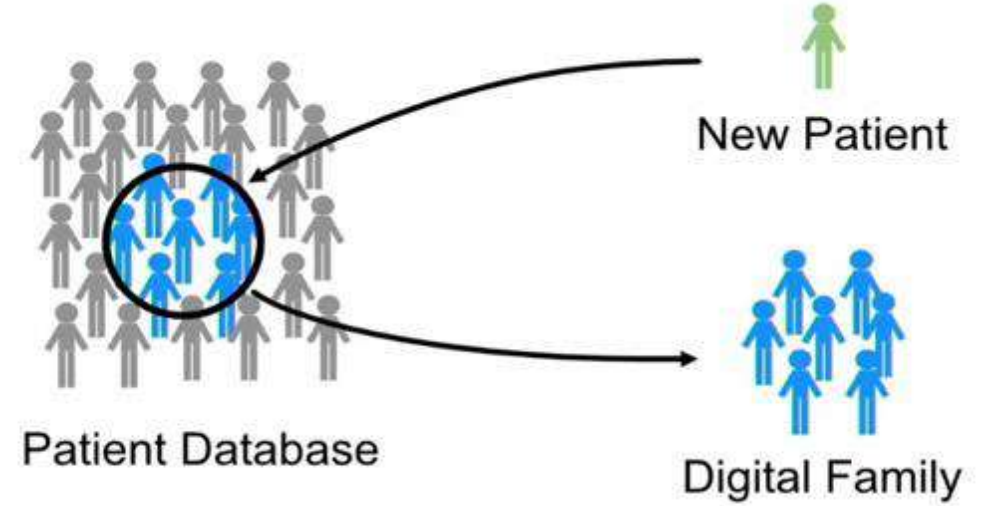


- Staphylococcus aureus*
- Staphylococcus epidermidis*
- Staphylococcus simulans*
- Staphylococcus lugdunensis*
- Staphylococcus saprophyticus*
- Streptococcus mitis*
- Streptococcus oralis*
- Streptococcus agalactiae*
- Streptococcus pyogenes*
- Streptococcus dysg. (Gr. C/G)*
- Enterococcus faecalis*
- Enterococcus faecium*
- Aerococcus urinae*
- Aerococcus sanguicola*
- Lactobacillus spp*
- Pseudomonas aeruginosa*





The concept of digital twin



Dinamik bir dijital temsil

Bir hasta veritabanı içerisinde, yeni bir hastayla benzer profildeki kişiler seçiliyor ve bu kişilerden oluşan bir “dijital aile” oluşturuluyor. Bu sayede, yeni hastanın potansiyel hastalık seyri hakkında öngörüler yapılabiliyor.



Article

Development and Validation of a Machine Learning Model for the Prediction of Multidrug-Resistant Gram-Negative Bacteria in Neutropenic Hematologic Patients

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ORIGINAL RESEARCH

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Machine Learning to Assess the Risk of Multidrug-Resistant Gram-Negative Bacteria in Neutropenic Hematologic Patients

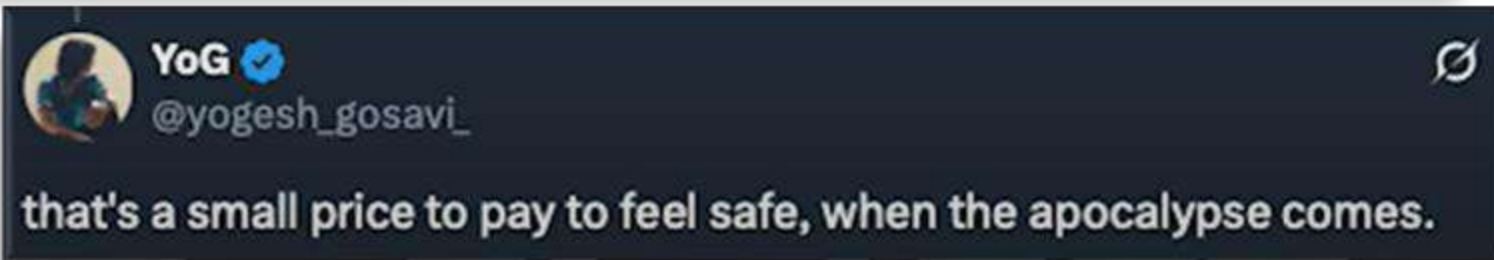
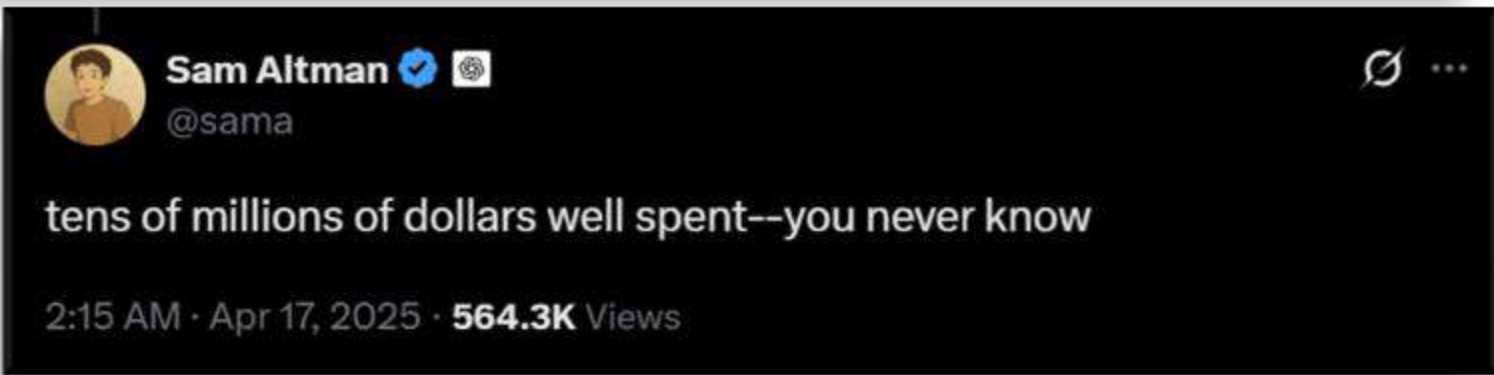
Review > Expert Rev Anti Infect Ther. 2024 Apr;22(4):179-187.

doi: 10.1080/14787210.2024.2322445. Epub 2024 Mar 8.

Carolina Garcia-Vidal · Pedro Puig
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Josep Mensa · Montserrat Rovira · Josep

Improving management of febrile neutropenia in oncology patients: the role of artificial intelligence and machine learning

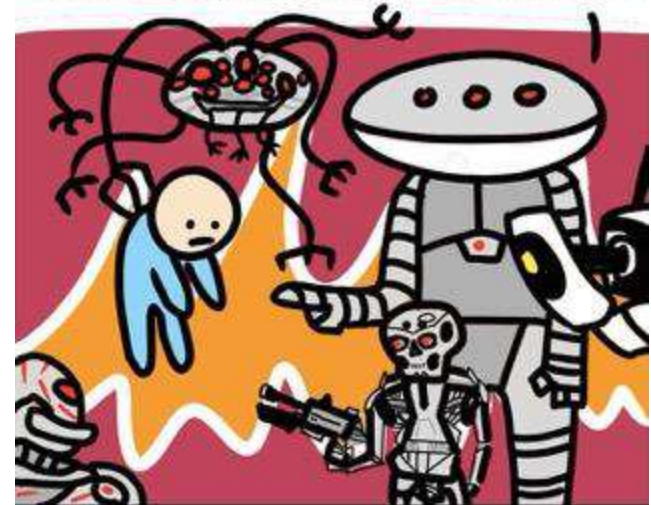
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Alex Soriano ¹, Carolina Garcia-Vidal ¹



Me saying "thank you" to ChatGPT,
so they spare my life when AI takes
over the world



KEEP THAT ONE ALIVE.
HE ALWAYS SAID "PLEASE".





**REHBERLER
NE DİYOR?**



MEETING REPORT

A consensus conference to define the utility of advanced infectious disease diagnostics in solid organ transplant recipients

AJT

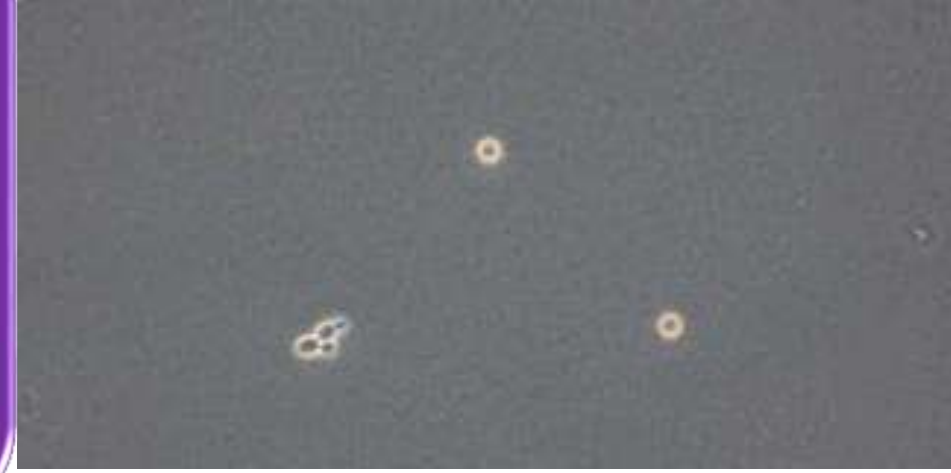


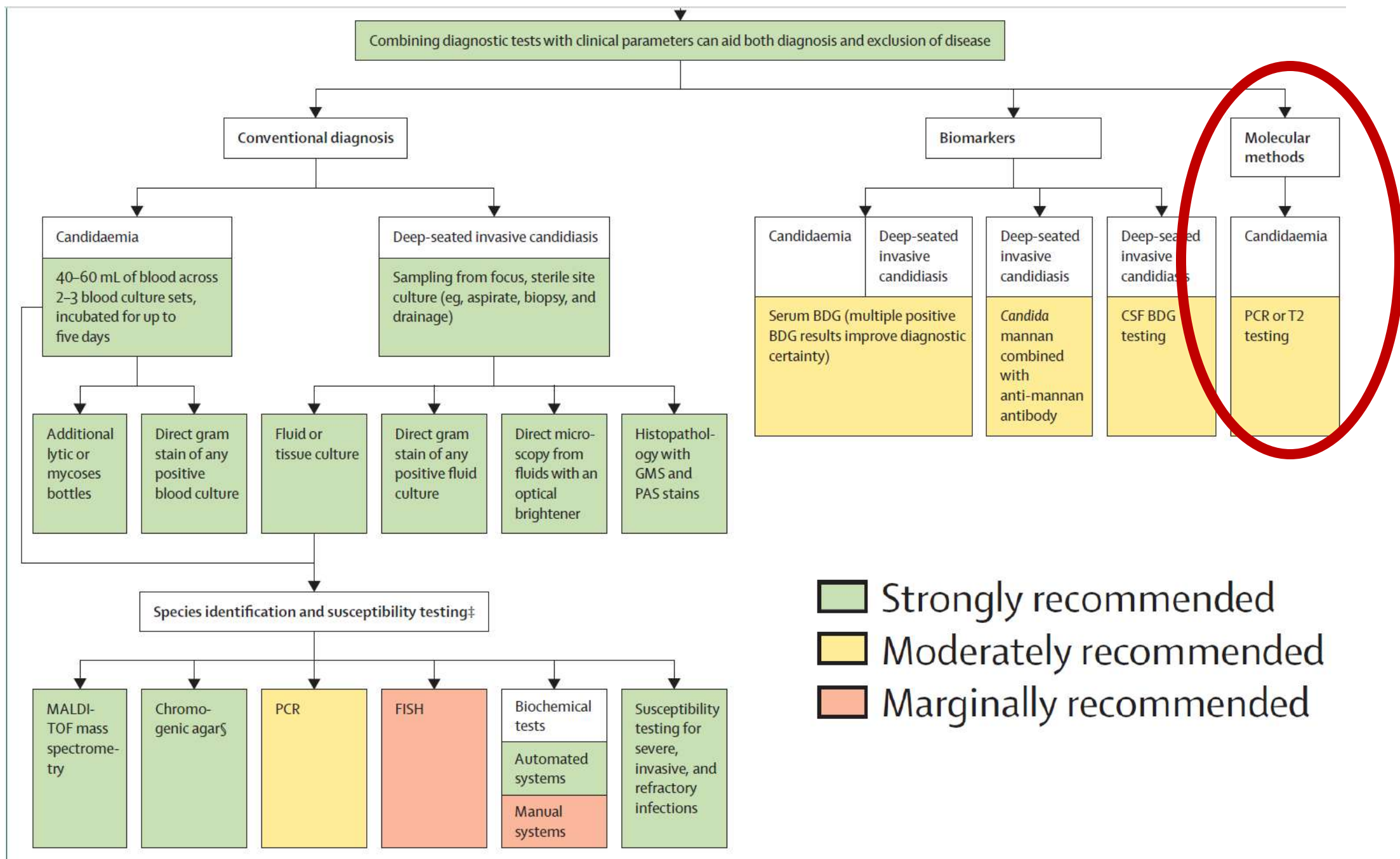
Proposed guidance	Level of evidence
Bacterial sepsis panels may be useful to shorten the time to organism identification and potentially lead to an earlier time to appropriate therapy	IIb B
Fungal sepsis panels may be useful to identify several common <i>Candida</i> species, <i>Cryptococcus</i> and/or <i>Rhodotorula</i>	IIa B
Fungal sepsis panels (ePlex BCID) may be useful to identify <i>Fusarium</i>	IIb C

Global guideline for the diagnosis and management of candidiasis: an initiative of the ECMM in cooperation with ISHAM and ASM



Geleneksel direkt mikroskopi ve kültüre dayalı yöntemler, hem yüzeysel hem de invaziv Candida enfeksiyonlarının tanısında hâlâ temel yaklaşımlardır. Biyobelirteçler ve moleküler tanı teknikleri bazı klinik durumlarda faydalı olabilir, ancak diğer durumlarda kullanımını destekleyen güvenilir veriler yetersizdir.





ECIL survey: Real life use of the new diagnostics techniques

- Responses: 28 centers
 - Specialists: 22 microbiologists (14 only micro, 8 micro + specialist), 6 ID (4/6 with micro), 5 Heme specialists (3/5 with micro), 3 other (pediatrician with micro, clinical scientist, not specified)
 - Countries: 4 Spain, 4 Italy, 2 UK, 2 Portugal, 2 Poland, 2 France, 2 Switzerland, 1: NS, Turkey, Sweden, Norway, Germany, Netherlands, Austria, Israel, Saudi Arabia, Brazil
- mNGS
 - Access at your center: 19/28 Yes
 - Platform: 17/19 specified (10 Illumina, 2 Nanopore, 1 Karius, PacBio, Minion, Salmona, Sanger)
 - Do you use it routinely for bacterial infections in FN patients: 1 Yes
- Multiplex PCR
 - Access at your center: 25/28 Yes
 - Platform: 19 Biofire/Filmarray, 3 respiratory/GI/encephalitis, 3 BD max, 1 Biopharm, 1 Seegene
 - Do you use it routinely for bacterial infections in FN patients: 14 Yes
- T2MR
 - Access at your center: 4/28 Yes
 - Platform: T2MR 3/4 specified
 - Do you use it routinely for bacterial infections in FN patients: 1 Yes
- MALDI
 - Access at your center: 24/28 Yes
 - Platform : 19 Bruker, 2 Vitek, 2 Biomerieux, 1 BD Bactec
 - Do you use it routinely for bacterial infections in FN patients: 23 Yes



	Multiplex PCR	NGS	T2MR	MALDITOF directly on positive BC	Specific PCR
Specific tests assessed	Verigene, BCID2 FilmArray, ePlex	Illumina NextSeq, MGISEQ-2000, DISQVER, iDTECT [®] Dx Blood v1 [®]	T2MR	Malditof on positive BC	Staphylococcus, VRE, Carbapenemases
No. papers identified through PubMed	293	35	18	16	32
No. studies selected for the analysis	8	6	1	4	0
FN patients/total pts (% of FN) (no. studies reported)	209/509 (11.5-100%, mean: 30%) (4 studies)	335/459 (52-100%, mean: 68%) (6 studies)	309/648 (47.7%) (1 study)	98/475 (20.6%) 3 studies	-
Sensitivity result (no. studies)	80.5%, 100% (2)	40%, 90%, 100%	84.2%	63% (GP), 89%, 93%, 92.6% (GN) 3 studies	-
Specificity result (no. studies)	NA	40%, 63%, 84%	85.9%	NA	-
PPV result (no. studies)	88.5% (1)	28%, 79%, 84%	NR	-	-
NPV result (no. studies)	NA	40%, 81%, 100%	NR	-	-



	Multiplex PCR	NGS	T2MR	MALDITOF directly on positive BC	Specific PCR
Specific tests assessed	Verigene, BCID2 FilmArray, ePlex	Illumina NextSeq, MGISEQ-2000, DISQVER, iDTECT® Dx Blood v1®	T2MR	Malditof on positive BC	Staphylococcus, VRE, Carbapenemases
Does the test improve NF microbiological documentation?	Yes 1/8 Not specifically reported in FN: 7/8	Yes 5/6 No 1/6	Yes, 11 samples	No	No
Does the test shorten time to diagnosis?	Yes 4/8 Not reported: 4/8	Not reported 6/6	Yes: 4.4 vs 65.7 h	Yes BC collection to species id (27.4 h vs 46.6 h) Egli	Yes (> 20 h)
Does the test affect treatment selection and timing?	Yes 3/8 « Likely » 1/8 No 2/8 Not reported 2	Yes 2/6 Not reported 4/6 Timing not reported	Not addressed Sensibility 84.2% (60% for <i>E. faecium</i>); Specificity:85.9%	Yes: (3.7 versus 6.7 h from Gram stain, p 0.003- Oshtoff).	Likely if used with AMS programs. No data on NF
Does the test affect antibiotic treatment duration?	Not reported 8/8	Not reported 6/6	Not reported	No (Oshtoff)	Not reported
Does the test improve NF outcomes (survival, LOS, ICU transfer)?	No 3/8 Not reported 5/8	Not reported 6/6 (1/6: «relief» in 42% of patients)	Not addressed	Better optimal Tx (Torres) and less ICU admission (23.1 versus 37.2%, p 0.02).	

Saturday, 12 April 2025 - 11:00 CEST

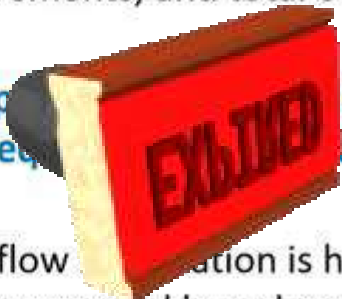
Cut a long story short: choosing NGS platforms

Speaker(s) **Etienne RUPPE, France**
Stefan GREEN, United States



Summary



- Short-read sequencers are improving read-length, and long-read sequencers are improving cost, input DNA requirements, and total output.
- Your platform and sequencing strategy drive the choice of workflow and sequencing. 
- Workflow optimization is highly valuable to get to the sequencer quickly and reproducibly.
- When in doubt, consult a friendly shared resource (core facility director!). 



- Everything in this talk is already out of date!



Stefan Green
United States

Sonuç olarak.....



Bu yeni testlerin çoğu mikrobiyolojik dökümantasyonu ve tanı ya da duyarlılık sonuçlarına ulaşma süresini iyileştirse de, immünsupresif hastalarda sağkalımı değiştirdiğine dair bir kanıt yoktur.

Kan kültürleri başta olmak üzere konvansiyonel yöntemler rutin olarak kullanılmalıdır.

Mevcutsa, yeni testler rutin mikrobiyolojik tekniklerle birlikte kullanılmalıdır.

İmmünsupresif hastalarda bu testlerin yararını ve maliyet etkinliğini değerlendirmek için büyük, prospektif müdahale çalışmaları gereklidir.



Tesekkürler