



MPOX hastalığında aşı çalışmaları

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Sunu planı

- Aşı tarihçesi
- Aşı kimlere yapılmalı (WHO)
- Kullanımda olan aşular (Eski çağ aşılama)
- Preklinik faz aşı çalışmaları (Yeni çağ aşılama)

Aşı Tarihi



Jenner Museum, Berkeley,

Figure 1. Edw
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Dr. Edward Jenner (1749-1823) performing his first vaccination against smallpox on James Phipps, a boy of 8, May 14, 1796, oil on canvas by Ernest Board (1877-1934), 1920-1930, U.K. (Getty Images)

Aşı Tarihçesi



Fig. 1 Şamizâde Mehmed Atâullah Efendi (1771?-1826)

- 1885'te dünyada ilk defa çiçek aşısı uygulaması için Osmanlı'da kanun çıkarıldı.
- 1892'de ilk Çiçek Aşısı Üretim Merkezi (Telkikhâne-i Şâhâne) Miralay Hüseyin Remzi Bey tarafından kuruldu.

- Child's Nervous System (2019) 35:903–906
<https://doi.org/10.1007/s00381-019-04115-1>
- Yıldırım N. Türkiye'de çiçek aşısı üretimi, 1840-1980 Turk Hij Den Biyol Derg, 2023; 80(3): 387 - 406

Aşı kimlere yapılmalı



Home

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- Mass vaccination is not required nor recommended for monkeypox at this time;
- Primary preventive (pre-exposure) vaccination (PPV) is recommended for individuals at high-risk of exposure. Persons at highest risk of exposure in the current multi-country outbreak are gay, bisexual or other men who have sex with men (MSM) with multiple sexual partners. Others at risk may include individuals with multiple casual sexual partners; sex workers; health workers at risk of repeated exposure, laboratory personnel working with orthopoxviruses; clinical laboratory and health care personnel performing diagnostic testing for monkeypox; and outbreak response team members;
- The level of risk of exposure may vary between the groups and could be used in countries for prioritization in case of limited vaccine supply;
- Post-exposure preventive vaccination (PEPV) is recommended for contacts of cases ideally within four days of first exposure (and up to 14 days in the absence of symptoms);
- Vaccination programmes must be backed by thorough surveillance and contact-tracing, and accompanied by a strong information campaign, robust pharmacovigilance, ideally in the context of collaborative vaccine effectiveness studies with standardized protocols and data

Aşı kimlere yapılmalı



Advisory Committee on Immunization Practices
(ACIP)

October 25-26, 2023

Meningococcal Vaccines

Pfizer's MenABCWY vaccine may be used when both MenACWY and MenB are indicated at the same visit.*

*1) Healthy individuals aged 16–23 years (routine schedule) when shared clinical decision-making favors administration of MenB vaccination. 2) Individuals aged 10 years and older at increased risk of meningococcal disease (e.g., due to persistent complement deficiencies, complement inhibitor use, or functional or anatomic asplenia) due for both vaccines.

Mpox Vaccines

ACIP recommends vaccination[†] with the 2-dose[§] JYNNEOS vaccine series for persons aged 18 years and older at risk for mpox[¶]

[†]This is an interim recommendation that ACIP will revisit in 2-3 years

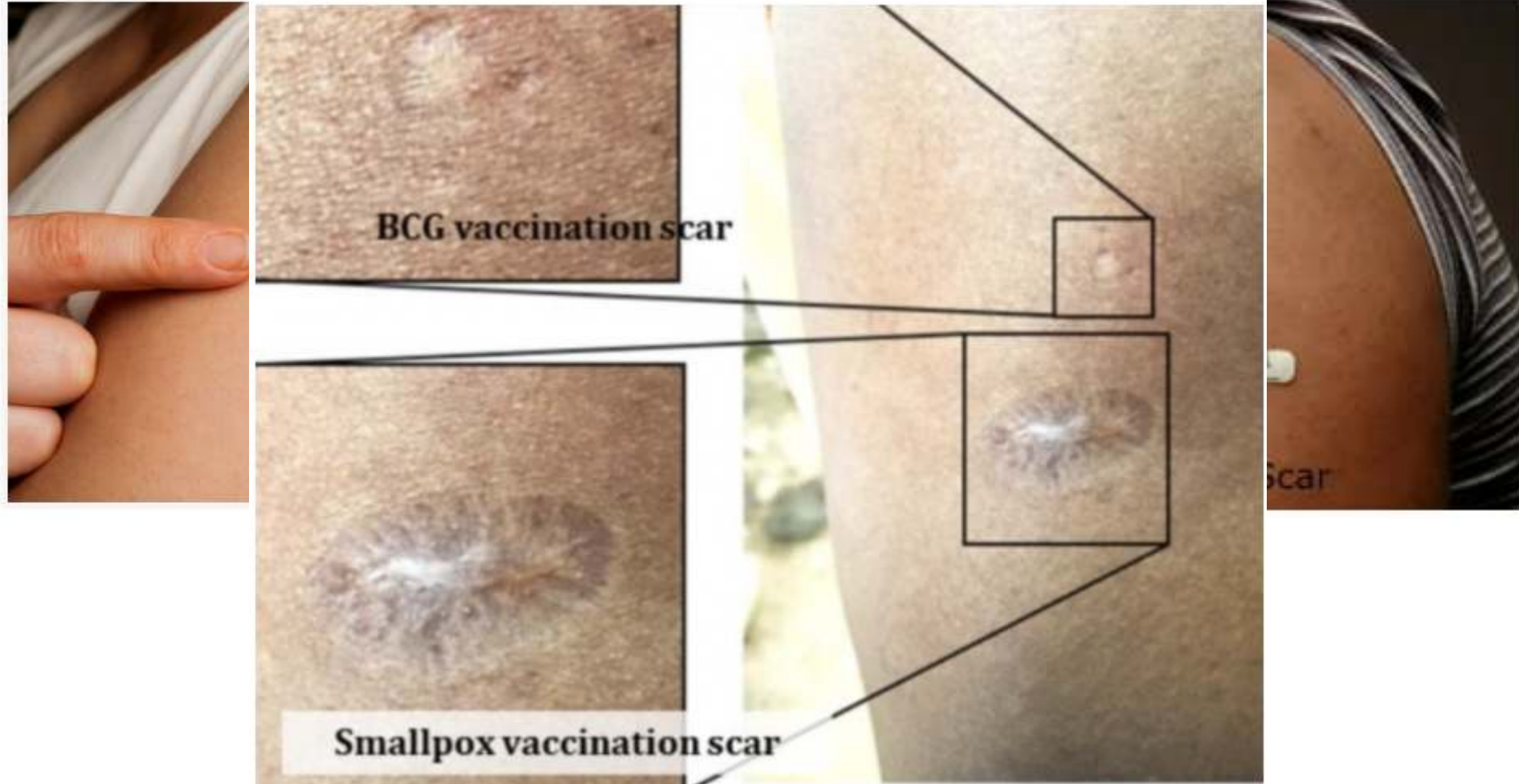
[§]Dose 2 administered 28 days after dose 1

[¶]Persons at risk:

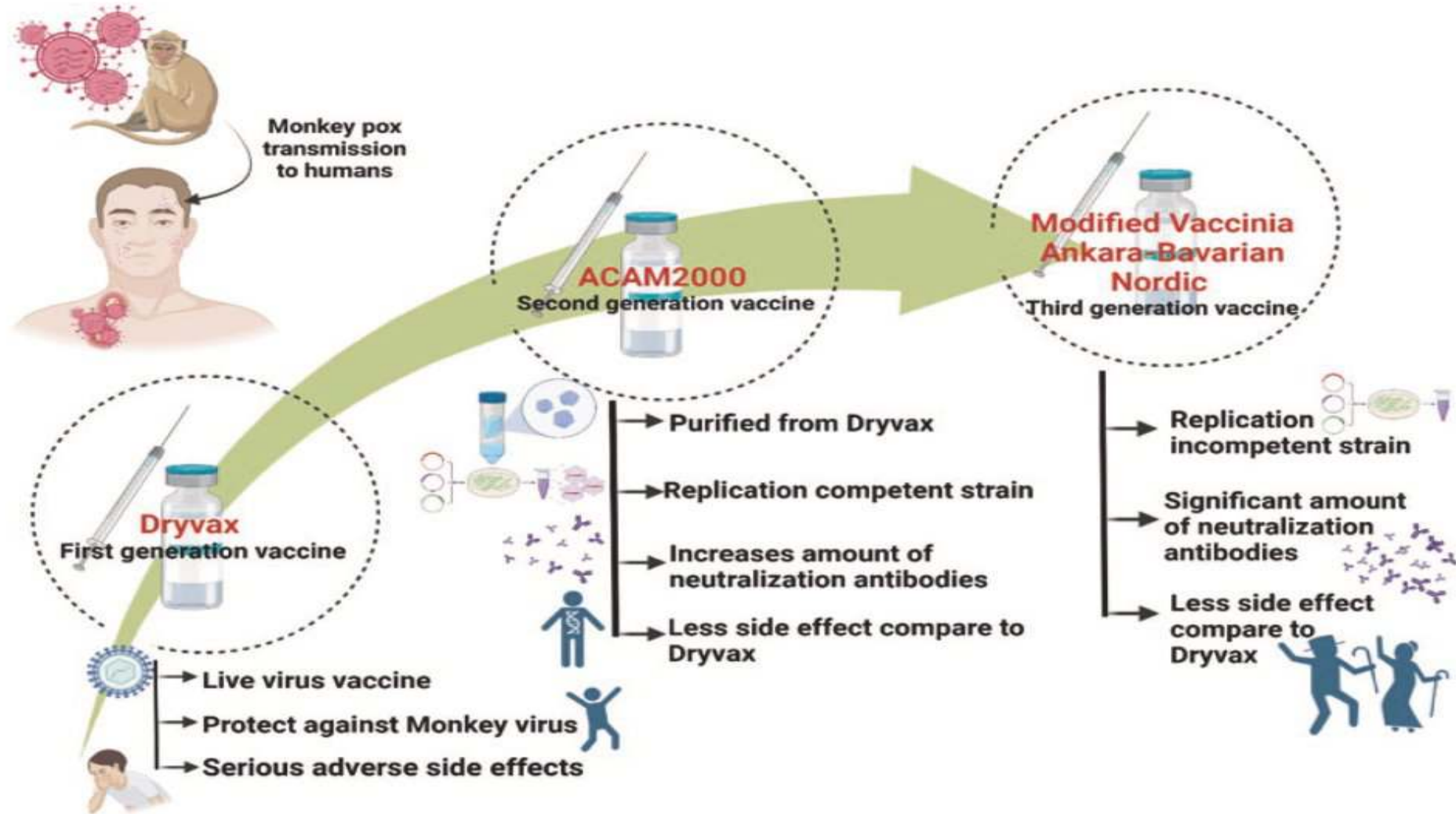
- Gay, bisexual, and other men who have sex with men, transgender or nonbinary people who in the past 6 months have had one of the following:
 - A new diagnosis of ≥ 1 sexually transmitted disease
 - More than one sex partner
 - Sex at a commercial sex venue
 - Sex in association with a large public event in a geographic area where mpox transmission is occurring
- Sexual partners of persons with the risks described in above
- Persons who anticipate experiencing any of the above

<https://www.cdc.gov/vaccines/acip/recommendations.html>

Kullanılan aşular

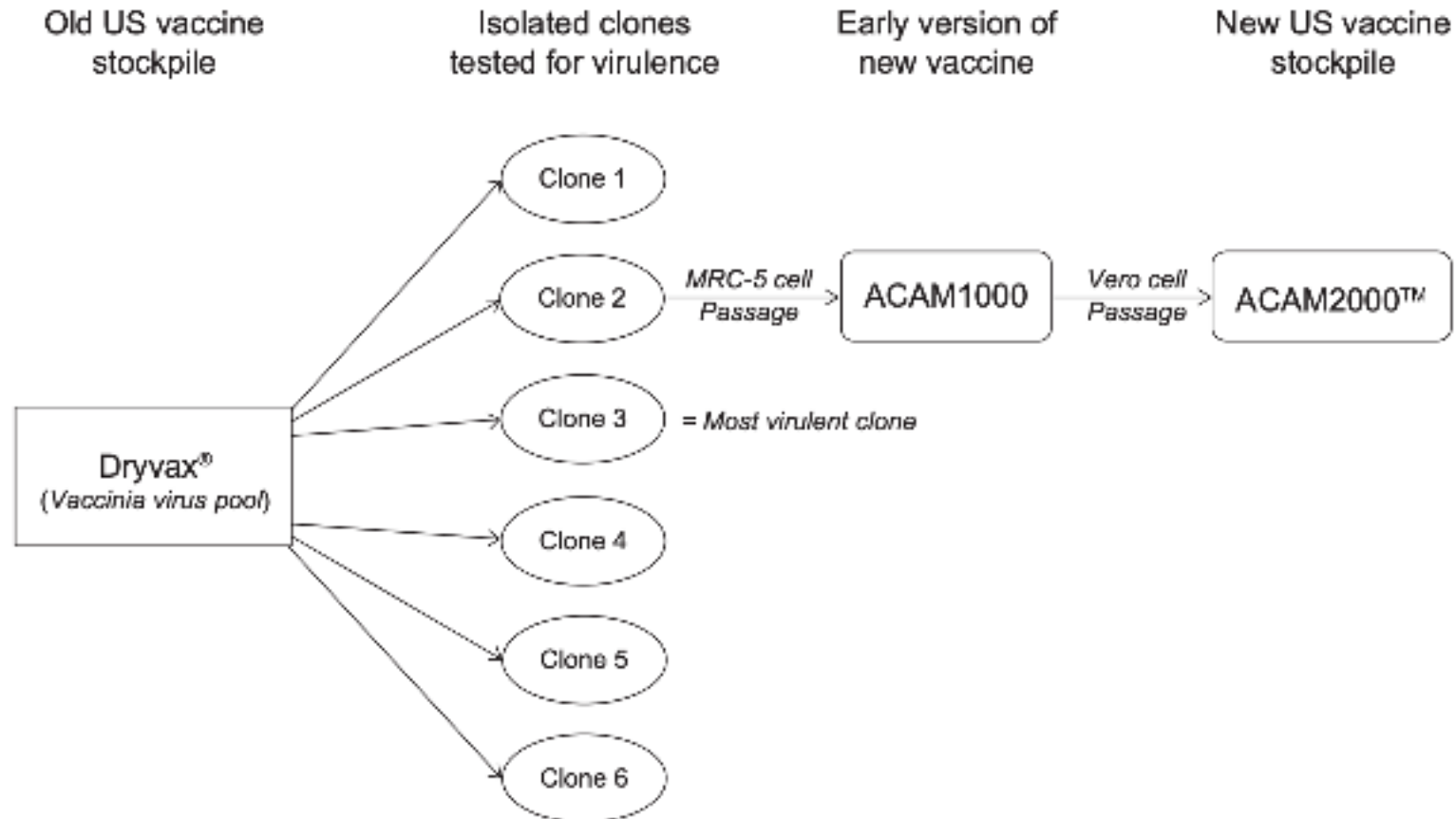


Kullanılan aşılar



Kullanılan aşular

ACAM2000™: The new smallpox vaccine for United States Strategic National Stockpile



Kullanılan aşular



*Tropical Medicine and
Infectious Disease*



Review

Human Monkeypox: Current State of Knowledge and Implications for the Future

Katy Brown ^{1,2,*} and Peter A. Leggat ¹

¹ College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville QLD 4811, Australia; peter.leggat@jcu.edu.au

² Médecins Sans Frontières, Geneva 1202, Switzerland

* Correspondence: katy.brown@my.jcu.edu.au; Tel.: +34-711-717861

Kullanılan aşılar

letters to nature

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Immunogenicity of a highly attenuated MVA smallpox vaccine and protection against monkeypox

Patricia L. Earl¹, Jeffrey L. Americo¹, Linda S. Wyatt¹, Leigh Anne Eller², J. Charles Whitbeck³, Gary H. Cohen³, Roselyn J. Eisenberg³, Christopher J. Hartmann⁴, David L. Jackson⁴, David A. Kulesh⁴, Mark J. Martinez⁴, David M. Miller⁴, Eric M. Mucker⁴, Joshua D. Shamblin⁴, Susan H. Zwiars⁴, John W. Huggins⁴, Peter B. Jahrling⁴ & Bernard Moss¹

Kullanılan aşular



JYNNEOS effectiveness as PEP against mpox, New York City:*

-Results: Among individuals with high-risk* exposure, vaccine effectiveness was 77% (95% CI: 51%-92%) with PEP <14 days after last exposure (n=273) and 79% (46%-94%) with PEP <14 days after first exposure (n=208)**

Israel single-dose VE study: **

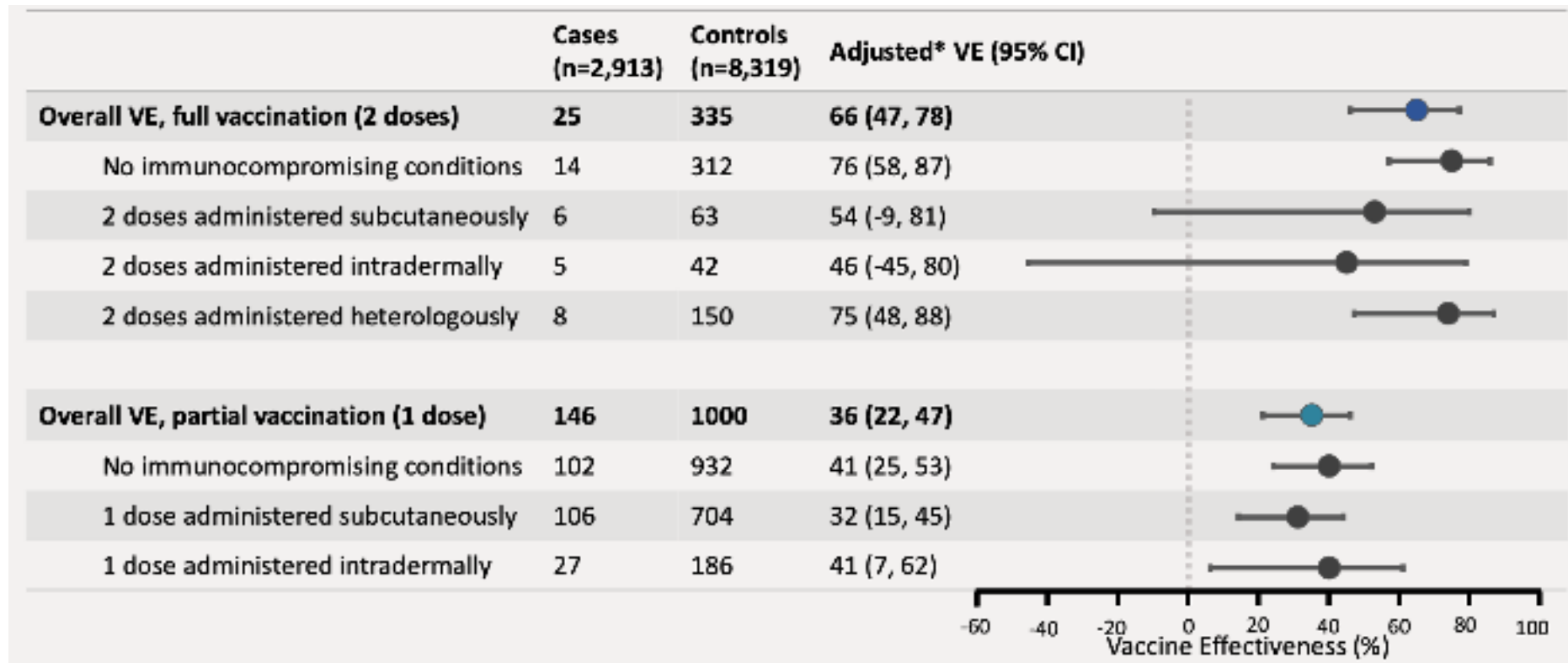
-Adjusted single-dose vaccine effectiveness was 86% (95% CI: 59%-95%)

*<https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-02>

**doi.org/10.1038/s41591-023-02229-3 (2023)

Kullanılan aşular

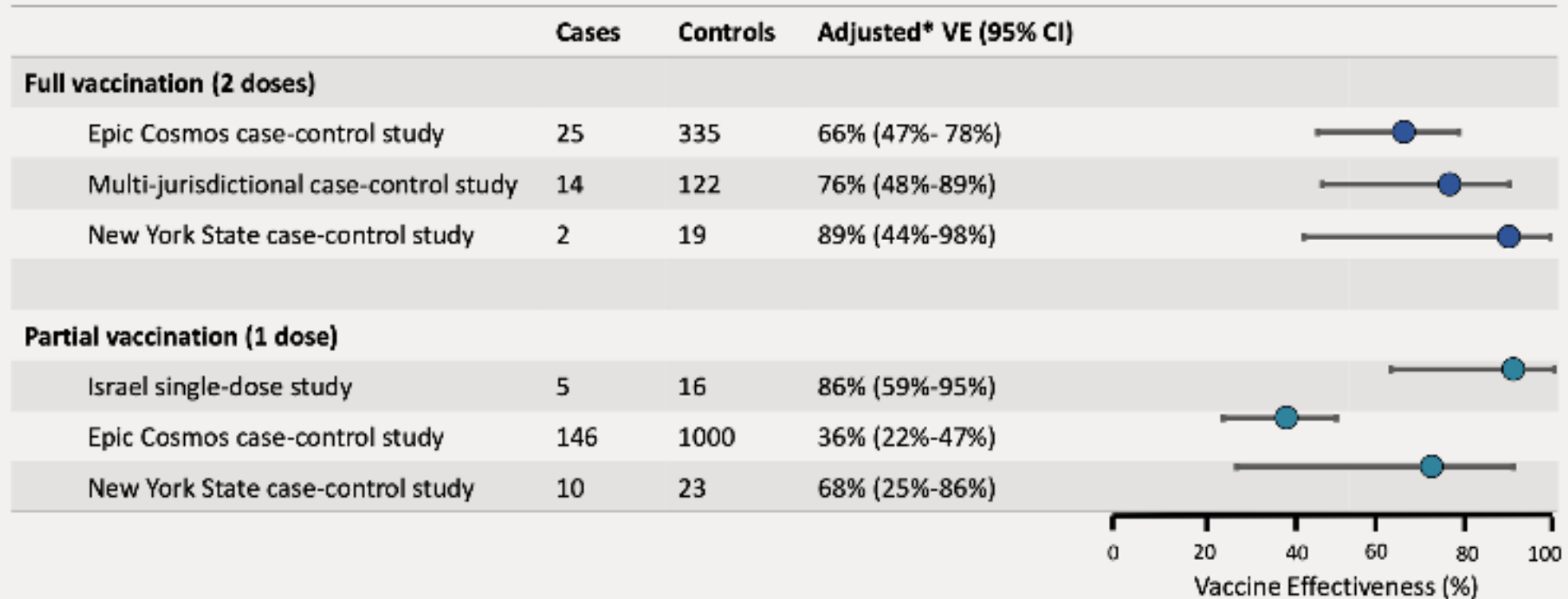
Epic Cosmos Case-Control Study: Methods*



*<https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-02>

Kullanılan aşular

Vaccine effectiveness of JYNNEOS against mpox ranges from 66%-89% for full vaccination and 36%-86% for partial vaccination



*<https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-02>

Kullanılan aşular

Reemergence of Human Monkeypox and Declining Population Immunity in the Context of Urbanization, Nigeria, 2017–2020

Phi-Yen Nguyen, Whenayon Simeon Ajisegiri, Valentina Costantino, Abrar A. Chughtai, C. Raina MacIntyre

Kullanılan aşular

Emerging Microbes & Infections

2024, VOL. 13, 2387442 (15 pages)

<https://doi.org/10.1080/22221751.2024.2387442>

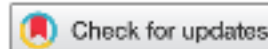


EMi



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Global perspectives on smallpox vaccine against monkeypox: a comprehensive meta-analysis and systematic review of effectiveness, protection, safety and cross-immunogenicity

Hao Liu^{a*}, Wenjing Wang^{a*}, Yang Zhang^{a,b}, Fuchun Wang^a, Junyi Duan^a, Tao Huang^a, Xiaojie Huang^{a,c} and Tong Zhang^{a,b,c}

^aClinical and Research Center for Infectious Diseases, Beijing Youan Hospital, Capital Medical University, Beijing, People's Republic of China; ^bBeijing Institute of Sexually Transmitted Disease Prevention and Control, Beijing, People's Republic of China; ^cBeijing Key Laboratory of HIV/AIDS Research, Beijing, People's Republic of China

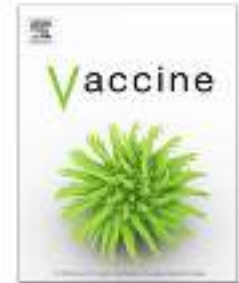
Kullanılan aşular



Contents lists available at [ScienceDirect](#)

Vaccine

journal homepage: www.elsevier.com/locate/vaccine



Short communication

Profiling of the antibody response to attenuated LC16m8 smallpox vaccine using protein array analysis

Akiko Eto^a, Masanori Fujita^b, Yasumasa Nishiyama^{c,1}, Tomoya Saito^a, Douglas M. Molina^d, Shigeru Morikawa^{e,2}, Masayuki Saijo^f, Yasuhiko Shinmura^g, Yasuhiro Kanatani^{a,*}

^a Department of Health Crisis Management, National Institute of Public Health, 2-3-6 Minami, Wako-shi, Saitama 351-0197, Japan

^b Division of Environmental Medicine, National Defense Medical College, 3-2 Namiki, Tokorozawa-shi, Saitama 359-8513, Japan

^c Health Care Center, Japan Self-Defense Forces Central Hospital, 1-2-24 Ikeziri, Setagaya-ku, Tokyo 154-8532, Japan

^d Antigen Discovery, Inc., Irvine, CA, United States

^e Department of Veterinary Science, National Institute of Infectious Diseases, Toyama 1-23-1, Shinjuku-ku, Tokyo 162-8640, Japan

^f Department of Virology I, National Institute of Infectious Diseases, Toyama 1-23-1, Shinjuku-ku, Tokyo 162-8640, Japan

^g KIM Biologics Co., Ltd, Kyokushi, Kikuchi, Kumamoto 860-8568, Japan



Kullanılan aşılar

Aşı	Hazırlanma yolu	Öneriler	Doz ve uygulama yolu	Kontrindikasyon	Yan etki
Drywax	Canlı atenüe				
ACAM2000	2nd generation modern hücre kültürü sistemi ile hazırlanmış Replikasyon kompetent	MPXV için temas riski taşıyan kişiler (14 güne kadar)	Primer doz ve 3 yılda bir (YRK) 1st-10 yılda bir (DRK) Deltoid bölgeye bifurkat iğne ile 15 hızlı perkutanöz uygulama	İmmünkompromize, atopik dermatit, emzirme ve hamilelik dönemi, <16 yaş,	LAP, lokal hassasiyet KMP, miyokardit
LCM16m18	3rd generation minimal replikasyon kompetent	MPXV için risk taşıyan kişiler	Tek doz Bifurkat iğne ile tek perkutanöz enjeksiyon	Aşı komponentlerine allerjik durum	Ciddi yan etki gözlenmedi. Kaşıntı, LAP, baş ağrısı, ateş

Kullanılan aşılar

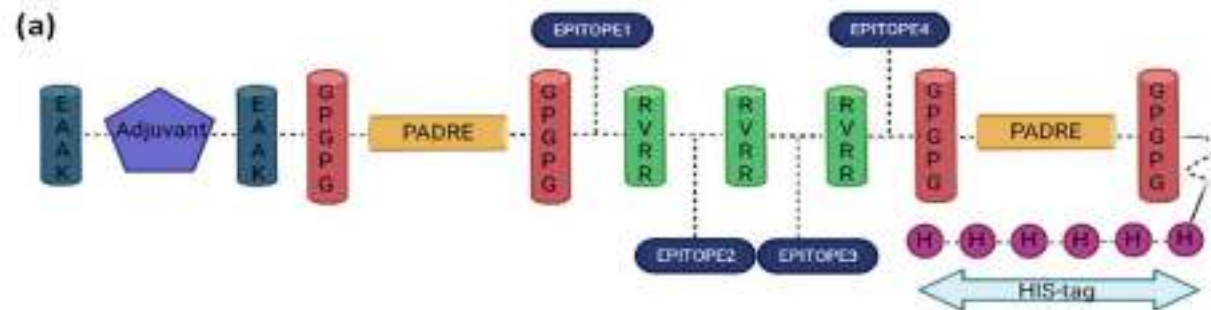
Aşı	Hazırlanma yolu	Öneriler	Doz ve uygulama yolu	Kontrindikasyon	Yan etki
Jynneos (ABD 2019) MVA-BN, İmvamune ve İmvanex	3rd generation non replikatif canlı vaccinia virus aşısı	MPXV için yüksek ve düşük virülan ile risk taşıyan kişiler Pre/postesposure	2 doz 4 hafta aralıklı olarak 2 yılda bir rapel (YVRT) 10 yılda bir rapel (DVRT) İlk doz SC ve sonraki doz ID/SC	Daha önceki MPX aşılarına karşı allerjik reaksiyon geliştirmesi,	Lokal reaksiyonlar Sinus taşikardisi
Human vaccinia virus immunglobulin	Purifiye insan IgG solusyonu. Sağlıklı çiçek ve ya Mpox aşısı tekrar doz yapılan bireylerden alınmış plazma	Postexposure profilaksi amaçlı	60000 U/kg intravenöz infuzyon 2 ml/dak yüksek risk taşıyanlar, 0,02 ml/dak düşük risk taşıyanlar	IgA hipersensitivitesi olanlar, immunglobulin uygulanmasına anafilaksi hikayesi olanlar	Anafilaksi ARDS

Preklinik faz aşı çalışmaları

Article

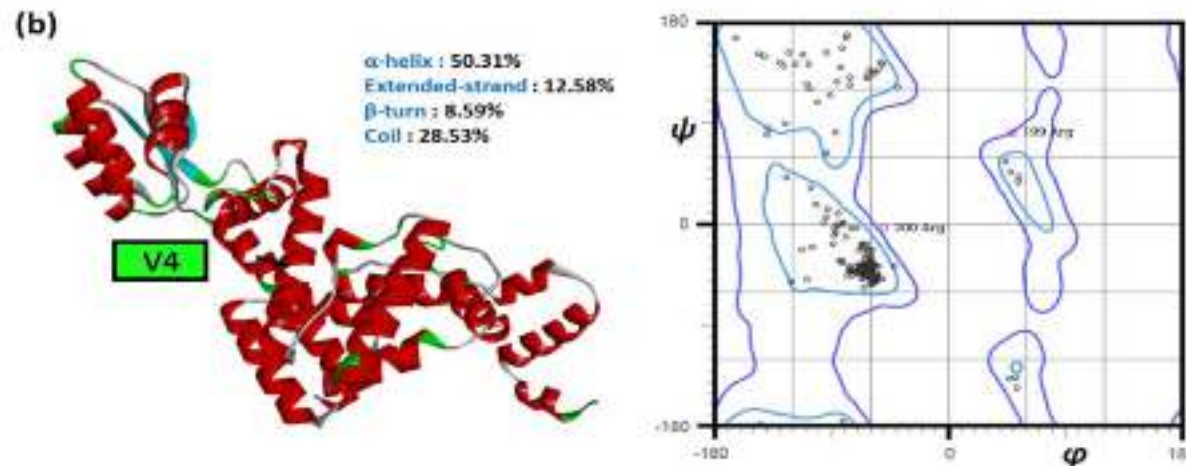
Multi-Epitope Vaccine for Monkeypox Using Pan-Genome and Reverse Vaccinology Approaches

Rayapadi G. Swetha ^{1,2,+} , Soumya Basu ^{1,2,+} , Sudha Ramaiah ^{3,4} and Anand Anbarasu ^{1,2,*}



-L5L

-A28



-L5

Preklinik faz aşı çalışmaları

Journal Pre-proof

An mpox quadrivalent mRNA vaccine protects mice from lethal vaccinia virus challenge

Entao Li, Qizan Gong, Jiachen Zhang, Xiaoping Guo, Wenyu Xie, Da Chen, Yanqiong Shen, Dongxiang Hong, Zhihao Li, Qianqian Wang, Chao Wang, Yucai Wang, Sandra Chiu



-B6

-A35

-A29

-M1

SONUÇ

İmmünobiyoloji, bir aşının etkili olabilmesi için uyarılması gereken bağışıklık sisteminin tanımlanmasını mümkün kılmalıdır.

