



Smallpox Bibliography December 2003

1: Clin Infect Dis. 2003 Dec 1;37(11):1579-80.

Cardiac dysrhythmia following smallpox vaccination.

Whitman TJ, Ferguson MA, Decker CF.

Publication Types:

Case Reports

Letter

PMID: 14614684 [PubMed - indexed for MEDLINE]

2: JAMA. 2003 Nov 5;290(17):2331.

MSJAMA. Uses of Jacobson v Massachusetts in the age of bioterror.

Joseph DG.

Yale University, New Haven, Conn, USA.

Publication Types:

Historical Article

PMID: 14600197 [PubMed - indexed for MEDLINE]

3: JAMA. 2003 Nov 5;290(17):2329-30.

MSJAMA. The physicians' dilemma in the 18th-century French smallpox debate.

Lipkowitz E.

Northwestern University, Evanston, Ill, USA.

Publication Types:

Historical Article

PMID: 14600196 [PubMed - indexed for MEDLINE]

4: Am J Med. 2003 Nov;115(7):570-2.

Vaccinating health care workers against smallpox in an isolated primary care facility.

Lesho EP, Schissel DJ, Harris MD.

Walter Reed Army Medical Center, Washington, DC, USA. emillesho@yahoo.com

Publication Types:
Multicenter Study

PMID: 14599637 [PubMed - indexed for MEDLINE]

5: Epidemiol Infect. 2003 Oct;131(2):849-57.

Forecasting the geographical spread of smallpox cases by air travel.

Grais RF, Ellis JH, Glass GE.

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Instituting air travel restrictions to slow the geographical spread of smallpox cases would have significant consequences and present serious logistical concerns. Public health decision makers must weigh the potential benefits of such restrictions against their negative impact. The goal of this research is to provide a basic analytical framework to explore some of the issues surrounding the use of air travel restrictions as a part of an overall containment strategy. We report preliminary results of a compartmental model for the inter-city spread of smallpox cases resulting from US domestic air travel. Although air traffic can be halted within hours as was shown following the terrorist attacks of 11 September 2001, these results suggest that the consequences of halting domestic air travel may not be outweighed by public health benefits.

PMID: 14596525 [PubMed - indexed for MEDLINE]

6: BMJ. 2003 Nov 1;327(7422):1010.

UK government denies that smallpox vaccination plans have fallen short of target.

Dyer O.

Publication Types:
News

PMID: 14593029 [PubMed - indexed for MEDLINE]

7: Am J Bioeth. 2003 Winter;3(1):W-IF 1.

Smallpox revisited?

Selgelid MJ.

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This article reviews the history of smallpox and ethical issues that arise with its threat as a biological weapon. Smallpox killed more people than any infectious disease in history--and perhaps three times more people in the 20th Century than were killed by all the wars of that period. Following a WHO-sponsored global vaccination campaign, smallpox was officially declared eradicated in 1980. It has since been revealed that the Soviet Union, until its fall in the early 1990s, manufactured tens of tons of smallpox for military purposes. A worry is that some of this may have fallen into the hands of "rogue" nations or terrorists. Current U.S. debate questions whether smallpox vaccine should therefore be made available to the American public, which--like the rest of the world--now lacks immunity. Because the vaccine is considerably dangerous, public dialogue cannot resolve this matter if evidence material to the likelihood of attack is classified (i.e. secret). I conclude by recommending numerous future areas for ethics research related to the weaponization of smallpox.

PMID: 14560713 [PubMed - indexed for MEDLINE]

8: J Infect Dis. 2003 Oct 15;188(8):1181-91. Epub 2003 Oct 10.

Modeling a safer smallpox vaccination regimen, for human immunodeficiency virus type 1-infected patients, in immunocompromised macaques.

Edghill-Smith Y, Venzon D, Karpova T, McNally J, Nacsa J, Tsai WP, Trynieszewska E, Moniuszko M, Manischewitz J, King LR, Snodgrass SJ, Parrish J, Markham P, Sowers M, Martin D, Lewis MG, Berzofsky JA, Belyakov IM, Moss B, Tartaglia J, Bray M, Hirsch V, Golding H, Franchini G.

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We have modeled smallpox vaccination with Dryvax (Wyeth) in rhesus macaques that

had depletion of CD4(+) T cells induced by infection with simian immunodeficiency virus or simian/human immunodeficiency virus. Smallpox vaccination induced significantly larger skin lesions in immunocompromised macaques than in healthy macaques. Unexpectedly, "progressive vaccinia" was infrequent. Vaccination of immunocompromised macaques with the genetically-engineered, replication-deficient poxvirus NYVAC, before or after retrovirus infection, was safe and lessened the severity of Dryvax-induced skin lesions. Neutralizing antibodies to vaccinia were induced by NYVAC, even in

macaques with severe CD4(+) T cell depletion, and their titers inversely correlated with the time to complete resolution of the skin lesions. Together, these results provide the proof of concept, in macaque models that mirror human immunodeficiency virus type 1 infection, that a prime-boost approach with a highly attenuated poxvirus followed by Dryvax increases the safety of smallpox vaccination, and they highlight the importance of neutralizing antibodies in protection against virulent poxvirus.

PMID: 14551889 [PubMed - indexed for MEDLINE]

9: Lancet. 2003 Oct 4;362(9390):1092.

Putting Jenner back in his place.

Sally G, Oliver I.

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Publication Types:
Biography
Historical Article

Personal Name as Subject:
Jenner E

PMID: 14550693 [PubMed - indexed for MEDLINE]

10: Soc Hist Med. 2000 Dec;13(3):411-28.

Slavery, smallpox, and revolution: 1792 in Ile de France (Mauritius).

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In 1792 a slave-ship arrived on the french Indian Ocean island of Ile de France (Mauritius) from South India, bringing with it smallpox. As the epidemic spread, a heated debate ensued over the practice of inoculation. The island was in the throes of revolutionary politics and the community of French colonists were acutely aware of their new rights as 'citizens'. In the course of the smallpox epidemic, many of the political tensions of the period came to focus on the question of inoculation, and were played out on the bodies of slaves. Whilst some citizens asserted their right, as property owners, to inoculate their slaves, others, equally vehemently, objected to the practice and asserted their right to protect their slaves from infection. Eighteenth-century colonial medicine was largely geared to keeping the bodies of slaves and workers productive and useful, but formal medicine never had a monopoly. Slaves on Ile de France brought with them a rich array of medical beliefs and practices from Africa, India, and Madagascar. We have little direct historical evidence for these, but we do know that many slaves came from areas in which forces of

smallpox inoculation were known and practised.

Publication Types:
Historical Article

PMID: 14535269 [PubMed - indexed for MEDLINE]

11: Optometry. 2003 Sep;74(9):583-98.

Smallpox and smallpox vaccine: ocular and systemic risks and ethical uncertainties.

Chous AP, Hom GG.

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BACKGROUND: The threat of bioterrorism and use of biological weapons has drawn renewed attention to smallpox, and smallpox vaccinations have been resumed in the United States. Both smallpox and smallpox vaccine carry risk of potentially debilitating or fatal adverse effects. The optometrist must be familiar with the signs and symptoms of smallpox disease and complications of smallpox vaccine for proper management and preservation of vision. **OVERVIEW:** The literature on the ocular and systemic effects of smallpox and smallpox vaccination is reviewed to provide the practicing optometrist with an overview of the issues involved in case management. Recent guidelines have placed additional ocular-related contraindications to receiving the smallpox vaccine. Risk factors for complications arising from smallpox vaccination are discussed. A discussion of the ethical implications is also presented. **CONCLUSIONS:** Knowledge of the signs and symptoms of smallpox infection, and of adverse effects caused by smallpox vaccination, can provide the necessary background to help eye care providers make appropriate diagnoses and referrals. Understanding ethical and legal/Constitutional questions surrounding the risk of outbreak and various vaccination containment strategies will help optometrists make informed decisions as health care professionals, patient advocates, and concerned citizens, as well as weigh the risks and benefits of vaccination, if it is offered to them.

Publication Types:
Review
Review, Tutorial

PMID: 14515981 [PubMed - indexed for MEDLINE]

12: Semin Respir Infect. 2003 Sep;18(3):196-205.

Smallpox.

Gooze LL, Hughes EC.

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Library Program Office
Office of Information
Veterans Health Administration

Until the 1970s, smallpox was feared worldwide for the significant morbidity and mortality it caused. Although naturally occurring disease has been eliminated, the virus itself has not been destroyed, and it is assumed that some of the variola stored in the former Soviet Union has been removed. The majority of the world's population is susceptible to smallpox because vaccination ended in 1972 in the United States and in the rest of the world in 1982. A major epidemic could result if there was an intentional release of smallpox. Variola is both durable and highly infective, 2 features that make it an attractive bioweapon. Because of this threat, physicians should be familiar with the clinical features of smallpox and the appropriate isolation and medical response procedures. Although there is a vaccine that can provide pre- and postexposure protection, the vaccination itself is not without risks. There is no effective therapy for smallpox and studies of new treatments are underway.

Publication Types:

Review
Review, Tutorial

PMID: 14505281 [PubMed - indexed for MEDLINE]

13: J Clin Microbiol. 2003 Sep;41(9):4068-70.

Smallpox: residual antibody after vaccination.

Gallwitz S, Schutzbank T, Heberling RL, Kalter SS, Galpin JE.

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Of all the microorganisms and toxins, poxviruses (Orthopoxvirus) have the greatest potential for use by terrorists. These viruses can spread rapidly through the environment following initial infection. In 1980, the World Health Organization Eradication Program discontinued vaccination for smallpox and declared that the disease had been eliminated. With the threat of smallpox virus as a bioterrorism weapon, questions have been asked about the persistence of protection (as offered by antibodies) following vaccination with vaccinia virus vaccine. To address this, sera from 204 adults vaccinated as children were tested by enzyme immunoassay (EIA) for the presence of vaccinia virus antibody. Of the 204 individuals whose sera were examined for the presence of vaccinia antibody, 165 (80.9%) had been vaccinated once and 39 (19.1%) had been vaccinated at least twice. Of the 165 sera from individuals vaccinated once, 112 (67.9%) were positive. Of the 39 sera from individuals vaccinated more than once, 31 (79.5%) were positive. The presence of a vaccination scar at the time of blood collection was not determined. Fifty-six nonvaccinated individuals, under 30 years of age, were tested by EIA; four of these (7.1%) were positive for vaccinia virus antibody by EIA. Forty-four EIA-positive and 16 EIA-negative sera were also tested by serum neutralization (SN) as a comparison with the EIA test results; one serum (negative by EIA) was SN positive. No attempt was made to ascertain any demographics other than age (date of birth) and "remembered" times of vaccination.

PMID: 12958227 [PubMed - indexed for MEDLINE]

14: Nat Med. 2003 Sep;9(9):1115-6.

Comment on:

Nat Med. 2003 Sep;9(9):1125-30.

Nat Med. 2003 Sep;9(9):1131-7.

Keeping the lock on smallpox.

Weiner DB.

Publication Types:

Comment

News

PMID: 12949522 [PubMed - indexed for MEDLINE]

15: Nat Med. 2003 Sep;9(9):1131-7. Epub 2003 Aug 17.

Comment in:

Nat Med. 2003 Sep;9(9):1115-6.

Duration of antiviral immunity after smallpox vaccination.

Hammarlund E, Lewis MW, Hansen SG, Strelow LI, Nelson JA, Sexton GJ, Hanifin JM, Slifka MK.

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Although naturally occurring smallpox was eliminated through the efforts of the World Health Organization Global Eradication Program, it remains possible that smallpox could be intentionally released. Here we examine the magnitude and duration of antiviral immunity induced by one or more smallpox vaccinations. We found that more than 90% of volunteers vaccinated 25-75 years ago still maintain substantial humoral or cellular immunity (or both) against vaccinia, the virus used to vaccinate against smallpox. Antiviral antibody responses remained stable between 1-75 years after vaccination, whereas antiviral T-cell responses declined slowly, with a half-life of 8-15 years. If these levels of immunity are considered to be at least partially protective, then the morbidity and mortality associated with an intentional smallpox outbreak would be substantially reduced because of pre-existing immunity in a large number of previously vaccinated individuals.

PMID: 12925846 [PubMed - indexed for MEDLINE]

16: Nat Med. 2003 Sep;9(9):1125-30. Epub 2003 Aug 17.

Comment in:

Nat Med. 2003 Sep;9(9):1115-6.

Clonal vaccinia virus grown in cell culture as a new smallpox vaccine.

Weltzin R, Liu J, Pugachev KV, Myers GA, Coughlin B, Blum PS, Nichols R, Johnson C, Cruz J, Kennedy JS, Ennis FA, Monath TP.

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Although the smallpox virus was eradicated over 20 years ago, its potential release through bioterrorism has generated renewed interest in vaccination. To develop a modern smallpox vaccine, we have adapted vaccinia virus that was derived from the existing Dryvax vaccine for growth in a human diploid cell line. We characterized six cloned and one uncloned vaccine candidates. One clone, designated ACAM1000, was chosen for development based on its comparability to Dryvax when tested in mice, rabbits and monkeys for virulence and immunogenicity. By most measures, ACAM1000 was less virulent than Dryvax. We

compared ACAM1000 and Dryvax in a randomized, double-blind human clinical study.

The vaccines were equivalent in their ability to produce major cutaneous reactions ('takes') and to induce neutralizing antibody and cell-mediated immunity against vaccinia virus.

Publication Types:

Clinical Trial

Randomized Controlled Trial

PMID: 12925845 [PubMed - indexed for MEDLINE]

17: J Eur Acad Dermatol Venereol. 2003 Jul;17(4):487-8.

Smallpox scars - the only evidence of an eradicated disease.

Verma SB.

Publication Types:

Letter

PMID: 12834478 [PubMed - indexed for MEDLINE]