



Advances in Vaccination Practice during Pregnancy Care Relevant to Group B Strep (GBS) Disease Prevention

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“Vaccination is the Most Significant Medical Achievement”

Abstract

Background/Introduction
 Identify means to reduce or eliminate vaccination injection fear or discomfort in an effort to avoid vaccine-preventable causes of stillbirth and damaged babies at birth.

Methods
 Review and analyze relevant medical literature in English regarding vaccination practices and concerns during pregnancy.

Results
 1) Our review of current relevant American Congress of Obstetricians and Gynecologists (ACOG) publications showed no mention of vaccine injection pain and no means to prevent injection pain.
 2) Recommendations supported by USPHS class I or II evidence include:
 a) medical providers can provide distractions at the time of injection;
 b) use of cold or vibration at skin site contralateral to the proposed injection site;
 c) inject the most painful shot last; and
 d) do not invoke “man up” imprecations or false reassurances.

Conclusions
 1) Evidence from non-reproductive medicine literature demonstrates effective means to reduce vaccination injection pain.
 2) The listed United States Public Health Services (USPHS) recommended suggestions can be utilized without cost or difficulty in clinical reproductive care practices.



Jonas Salk, MD



Results

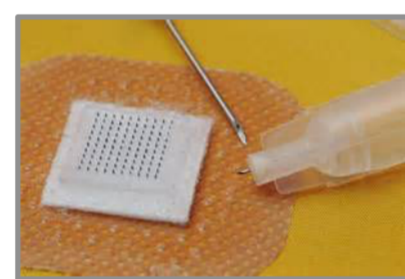
- 1) Pain experience of children vs. adults
- 2) “Imprinting” of sensitization
- 3) Consequences of poor pain/anxiety/stress management
- 4) Consequences of parental anxiety
- 5) Myths
- 6) Evidence-based intervention (similar to Taddio A. *Clinica Therapeutic* 2003 p31)

Comments

- Newly recognized RESEARCH imperatives include:
- 1) Neurologic mechanisms
 - 2) Research @ long-term consequences on clinical choices and policy-making
 - 3) Most cost-effective means to reduce pain and increase satisfaction

Background

- 1) Effective @ 60% to 90% + herd
- 2) Multiple shots
- 3) Childhood, adolescent, adult, maternal, paternal
- 4) Underutilized: patients, providers, policy makers (Leggett C. *Canada Mothers. CMA* 2014-16. Inadequate pain/fear control)
- 5) Emotion-driven myths



1918 Flu Pandemic
 500 million infected, 50 to 100 million killed
One of the world's deadliest disasters...
NOW PREVENTABLE!

Summary

- 1) We conducted “logic model” analysis of vaccination pain and means to reduce fear and pain
- 2) The importance of vaccination as a personal and public health practice is impaired by vaccinating pain. Reducing the experience of vaccination pain is now a recognized priority in **BIOLOGICALLY-BASED** medicine.



Media stars such as Jenny McCarthy and Jim Carrey have powerful opinions about vaccination.

Goals

- 1) Review epidemiology
- 2) Biology of immunization
- 3) Theobald Smith principles
- 4) Pain pathobiology
- 5) “Evidence-based” clinical strategies



Painless Vaccine Administration



Ipsi- and Contralateral Stimulation

Methods

- 1) Created logic model review database
- 2) Industrial review of needles
- 3) Review “needle phobia” (trypanophobia)
- 4) Child/adult sequelae of vaccination pain
- 5) New technologies: stamps, band-aids, patches
- 6) Nonpharmacologic management—IM and oral
- 7) Breathing: yoga
- 8) Gate-theory based

References

- 1) Tapia MD, Sow SO, Tamboura B, et al. Maternal immunisation with trivalent inactivated influenza vaccine for prevention of influenza in infants in Mali: a prospective, active-controlled, observer-blind, randomised phase 4 trial. *Lancet Infectious Diseases*. Sep 2016 Vol 16 (9) 1026-1035.
- 2) Olsen SJ, Mirza SA, Vonglokhom P, et al. The Effect of Influenza Vaccination on Birth Outcomes in a Cohort of Pregnant Women in Lao PDR, 2014–2015. *Clin Infect Dis* 2016(63):487-94.
- 3) Richards JL, Hansen C, Bredfeldt C, et al. Neonatal outcomes after antenatal influenza immunization during the 2009 H1N1 influenza pandemic: impact on preterm birth, birth weight, and small for gestational age birth. *Clin Infect Dis*. 2013 May;56(9):1216-22.
- 4) Taddio A, et al. Survey of the prevalence of immunization non-compliance due to needle fears in children and adults. *Vaccine*. 2012 Jul 6;30(32):4807C12.
- 5) Oskaya E, et al. *Eur J Podiatr* 2010 Nov;169(11):1397-401.
- 6) Allsup SJ, Gosney MA. Anxiety and depression in an older research population and their impact on clinical outcomes in a randomised controlled trial *Postgrad Med J* 2002;78:674-677.
- 7) Brown RP, et al. Breathing practices for treatment of psychiatric and stress-related medical conditions. *Psychiatr Clin N Am*. 2013 Mar;36(1):121-40.
- 8) Kalyani BG Neurohemodynamic correlates of ‘OM’ chanting: A pilot functional magnetic resonance imaging study. *Int J Yoga* 2011 Jan-Jun; 4(1): 3–6.
- 9) Wells C, Kolt GS, Bialocerkowski A. Defining Pilates exercise: a systematic review. *Complement Ther Med* 2012 Aug;20(4):253-62.