“Reduced Discomfort” Vaccination: Pain Prevention Strategies

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“Vaccination is the Most Significant Medical Achievement”

Abstract

Background: Vaccine-preventable diseases are increasingly recognized to cause preventable morbidity, mortality, and costs. Despite the efficacy, utility, and ethical imperative of recommended vaccination schedules, fear of injection pain and programming by past injection experience remains a powerful disincentive to offer and receive recommended vaccines.

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

Methods: We performed Medline and PubMed English-language searches for controlled or uncontrolled evidence for prevention of vaccination injection pain. We hierarchically categorized recommendations according to U.S. Public Health Service (USPHS) criteria.

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) The clinical problem of injection pain is most frequently indexed in Pediatric, Family Practice, and General Medical journals respectively. 3) 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) cold, vibration, local anesthetic, or counterirritation at proposed injection site; d) inject the most painful shot last; and e) do not invoke “man-up” imperatives or false reassurances.

Conclusions: 1) Evidence from non-reproductive medicine literature demonstrates effective means to reduce vaccination injection pain. 2) The listed USPHS recommended suggestions can be utilized without cost or difficulty in clinical OB/GYN practice.

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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

Methods

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

Goals

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

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)

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.

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

References

6) Akuwuj LC, Gomery MA. Anxiety and depression in an older research population and their impact on clinical outcomes in a randomized controlled trial Postgrad Med 2002;76:674-677.

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

Ipsi- and Contralateral Stimulation

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References

6) Akuwuj LC, Gomery MA. Anxiety and depression in an older research population and their impact on clinical outcomes in a randomized controlled trial Postgrad Med 2002;76:674-677.