Evaluation of an Intervention for Reducing Latex Anaphylaxis during Cesarean Sections

Abstract

Objectives: The purpose of the study was to evaluate the effect of an intervention in the form of a directed questionnaire to assess latex sensitivity risk factors in order to assist in decreasing the incidence of latex anaphylaxis during cesarean sections. It was also intended to assess the rate of suspicion for latex sensitivity among pregnant women scheduled for elective cesarean section.

Introduction: Latex sensitivity is a known cause of allergic reactions, ranging from mild symptoms such as urticaria, dermatitis, rhinitis and wheezing to a life-threatening systemic reaction called anaphylaxis. Manifestations of anaphylaxis include angioedema, hypotension, bronchospasm and cardiovascular instability. This is a severe and fast-onset reaction that without immediate recognition and treatment can be fatal. It most frequently occurs in the surgical setting, when internal mucus membranes are exposed to medical latex equipment, such as gloves and catheters. A higher prevalence of latex sensitivity has been reported among women. The incidence of anaphylactic reactions to latex is especially high during gynecologic and obstetric procedures, in particular cesarean sections. It is a major concern of public health which has severe health and economical implications. In Hadassah Ein Kerem hospital in Jerusalem 11 cases were recorded in the year 2008 (out of 460 elective cesarean deliveries). These resulted in a management
decision to remove latex equipment from the cesarean deliveries. This policy was discontinued after 8 months and a more financially efficient policy was sought. A medical history questionnaire, a simple and handy screening tool, was employed to detect latex sensitive individuals prior to cesarean delivery. Such a questionnaire has a high sensitivity and specificity (validated with skin prick tests and serum levels of latex IgE antibodies).

**Methods:** Four hundred and fifty three pregnant women who were scheduled for an elective cesarean section in the Hadassah Ein Kerem hospital in Jerusalem completed a pre-operative questionnaire which identified a suspicion for latex sensitivity. The women who were suspected as latex sensitive were noted in the labor ward computerized system, and latex free equipment was used in the operating room. Data regarding the incidence of latex anaphylaxis during cesarean sections was collected for three consecutive periods: when latex was used in the operating rooms, when latex was totally removed, and during the utilization of the questionnaire. Epidemiological and medical details about the participants were collected and matched to the answers derived from the questionnaires. A financial analysis was made in order to determine whether the questionnaire is an economically efficient solution as compared with latex free management.

**Results:** During the questionnaire period there was a 70% reduction in the incidence of latex anaphylaxis during cesarean sections (p-value=0.015), in comparison with the latex usage without questionnaire period (p-value=0.003). The prevalence of suspicion for latex sensitivity among the women was 14.6%.

**Conclusions:** The questionnaire was found to be efficient in reducing the incidence of latex anaphylaxis during cesarean sections, but did not eliminate their occurrence completely. Using latex free equipment in the operation rooms during cesarean sections
was found to be more effective, both medically and economically – as it prevented them completely and with lower costs.
Bibliography


Mertes PM, Laxenaire MC. Anaphylactic and anaphylactoid reactions occurring during


