American Latex Allergy Association

Latex and Contraception

Nonlatex vs Latex Condoms: An Update

Summary

Latex allergies and other aversions to traditional male condoms led to the development of synthetic nonlatex alternatives in the 1990s. Male latex condoms have been available for 150 years with few modifications. Latex allergies and other aversions to traditional male condoms led to the development of synthetic nonlatex alternatives in the 1990s. Two condoms made of polyurethane are currently on the US market; two other nonlatex condoms are under investigation. A recent Cochrane review reported that clinical breakage rates are higher with nonlatex condoms vs latex. Nevertheless, the reviewers concluded that synthetic nonlatex condoms are an acceptable alternative for those with an aversion to latex condom use. More research is necessary with regard to contraceptive efficacy and protection from sexually transmitted infections (STIs).

Introduction

The male latex condom has changed little since its introduction more than 150 years ago.[1] Modifications have included the addition of spermicidal and nonspermicidal lubricants; minor changes in size, shape, thickness, and texture; and the addition of a local anesthetic designed to blunt premature ejaculation. Nevertheless, the underlying condom material - natural rubber latex derived from the sap of the Hevea brasiliensis tree - has remained consistent throughout. An estimated 20 billion male latex condoms are produced annually worldwide.[1]

Male latex condoms are widely used for their ability not only to prevent pregnancy, but also to protect against sexually transmitted infections. In the US, reliance on condom use is most prevalent among younger women and those who have never been married. One-third of sexually active US women aged 18 to 19 years report their partner using condoms, as do one-third of sexually active never-married women, regardless of age.[2]

Despite the latex condom?s popularity, some consumers find them unacceptable. In addition to complaints about comfort, sensation, smell, attractiveness, and ease of use, latex allergies preclude their use in up to 3% of the population.[3] Contact dermatitis is the most common clinical manifestation of latex sensitivity; however, mucosal and visceral contact, as opposed to cutaneous exposure, may produce more severe reactions.[4]

Male latex condoms also have a relatively high typical-use failure rate. On average, during the first 12 months of use, 15% of US women relying on condoms for contraception will become pregnant.[5] Condom failure is most prevalent among younger users (under age 20 years), women who are cohabiting, and those of lower socioeconomic status (under 200% of poverty), and relates not only to breakage and slippage but also to

inconsistent use.

Development of Nonlatex Condoms

Manufacturers have developed synthetic alternatives to latex condoms in recent years. The first polyurethane male condom became available in the US in 1995, marketed as the Durex Avanti™* (SSL International PLC, Knutsford, UK). A second, the Trojan Supra™* (Church & Dwight Co., Inc., Princeton, NJ [previously Carter-Wallace]) went on the market in 1999. Two other nonlatex condoms - the eZ-on™* polyurethane condom (Mayer Laboratories, Inc., Oakland, CA), which can be unrolled in either direction, and the latex-like styrene ethylene butylene styrene (SEBS) Tactylon™* condom (Sensicon Corp., Vista, CA) - are currently available in other countries and under investigation in the US. Synthetic nonlatex condoms cost about $1.30 to $1.50 apiece, roughly double the price of latex condoms.

Makers of nonlatex condoms claim they are as strong as latex, yet more sensitive due to a looser fit and better transmission of body heat. Polyurethane condoms are odorless, colorless, and nonallergenic, have a longer shelf life than latex, and can be used with any lubricant. Although polyurethane should prevent bacteria and viruses from passing through, clinical data are unavailable concerning the ability to prevent STIs, including AIDS. In addition, few studies have examined pregnancy rates with nonlatex condoms.[6-8] As a result, the Food and Drug Administration requires nonlatex condoms to carry labeling to this effect, advising consumers to use latex condoms unless they are allergic. The front of each box must include the words, ?for latex-sensitive condom users.?

New Cochrane Review

Earlier this year, an extensive Cochrane review evaluated evidence from all randomized controlled trials of non-latex vs latex condoms.[9] Ten studies (seven randomized crossover trials and three randomized parallel trials) met the reviewers? selection criteria. Three types of nonlatex condoms were evaluated in the included trials - Durex Avanti, eZ-on, and Tactylon. No published randomized controlled trials have evaluated the Trojan Supra.

All ten trials included data on clinical breakage. Clinical breakage is defined as the number of condoms that break during intercourse or withdrawal divided by the number of condoms used during intercourse. In nearly all cases, odds ratios (ORs) for clinical breakage were significantly higher with nonlatex condoms vs latex condoms. In general, nonlatex condoms were three to five times more likely to break during intercourse - OR=3.0 (95% confidence interval [CI], 1.3-7.0) to OR=5.4 (95% CI, 3.4-8.4) - compared with their latex counterparts.[9]

Three trials evaluated contraceptive efficacy.[6-8] Pregnancy rates with the Avanti and Tactylon condoms did not differ significantly from their latex comparisons.[6,8] The eZ-on condom, however, had a 6-month typical use pregnancy rate significantly higher than its latex counterpart: 9.0% (95% CI, 5.9%-12.2%) vs 5.4% (95% CI, 2.9%-7.8%).[7]

Discontinuation rates varied widely among the reviewed trials. Rates were similar between the eZ-on condom and its latex comparison, both under 30% in the first 6 months of use.[7] The Tactylon had a higher 6-month discontinuation rate than its latex counterpart, but the difference did not achieve statistical significance.[8] On the other hand, 38% of Avanti users stopped during the first 6 months of use, significantly higher than the 28% discontinuation rate with the latex comparison condom (p=0.002).[6]

Definitions of adverse events varied among trials. In general, these included genital burning, itching, irritation, rash, or bruising. Several trials reported lower rates of adverse events with nonlatex condoms vs latex condoms.[9] These findings presumably reflect the absence of latex allergic reaction with nonlatex condoms.

Most trials included measures of acceptability and satisfaction, although many did not report significant differences. With regard to the proportion of male users who would recommend the study condom to others, both the Avanti and Tactylon condoms scored significantly lower than their latex comparisons.[6,8] The eZ-on condom did not differ significantly from its latex counterpart in this regard.[7]

The reviewers concluded that nonlatex condoms, while not ideal, are an acceptable contraceptive option. Despite higher clinical breakage rates with all three nonlatex condoms and higher pregnancy rates with the eZ-on vs latex, these rates are similar to those found in the literature for standard latex condoms. Consequently, synthetic nonlatex condoms represent an acceptable alternative for those with allergies or other aversions to the use of male latex condoms. Larger studies are necessary for full evaluation of trends identified in the review, including whether differences exist between condom brands. The reviewers recommended that future research focus on the contraceptive efficacy of synthetic nonlatex condoms and their ability to protect against STI transmission.[9]

Take Home Messages

- Up to 3% of the US population cannot use latex condoms because of allergies
- Polyurethane condoms were introduced in 1995; two are currently on the US market
- Clinical data are unavailable concerning whether synthetic nonlatex condoms prevent STIs
- Clinical breakage rates are significantly higher with synthetic nonlatex condoms vs latex condoms
- Discontinuation rates have been higher and satisfaction lower with synthetic nonlatex condoms vs latex condoms
- Despite their drawbacks, synthetic nonlatex condoms are an acceptable alternative for those who cannot use latex condoms consistently

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