

Male Circumcision: Adverse Events Unlikely in Infants

Ricki Lewis, PhD | May 14, 2014

Male circumcision is unlikely to have adverse events (AEs) if performed before 1 year of age, but the risk increases up to 20-fold if the procedure is delayed, according to a study [published online](#) May 12 in *JAMA Pediatrics*.

In 2012, the American Academy of Pediatrics [updated its guidelines](#) on male circumcision, concluding that "the procedure's benefits justify access to this procedure for families who choose it." The statement was based on the findings of 3 randomized controlled trials showing that circumcision protects against infection by HIV.

In light of that statement, Charbel El Bcheraoui, PhD, from the Institute for Health Metrics and Evaluation at the University of Washington, Seattle, and colleagues conducted a retrospective cohort analysis of AEs associated with circumcision to get an estimate of risk for the general population. Previous studies have found that AEs range from 0.0008% to 3.6% among infants and from 0.9% to 8.8% in adults, but these investigations were small or not representative of the overall population.

In the present study, the researchers analyzed data on 2,339,760 newborn males included in the SDI Health administrative database between 2001 and 2010. Of those patients, 1,306,812 (55.9%) underwent circumcision, with 93.3% undergoing the procedure before the age of 1 year

The researchers used billing codes to identify 41 possible AEs. Of those, 6 occurred in circumcised newborns but not uncircumcised infants, including partial amputation of penis, replantation of penis, lysis or excision of penile adhesions postcircumcision, repair of incomplete circumcision, stricture of male genital organs, and artery suture. The team assigned risk windows (in days) to attribute AEs to the intervention.

In total, the team identified 5385 AEs among circumcised newborns and 1100 among uncircumcised newborns. The rate of total AEs from circumcision was just under 0.5%, and the rates of potentially serious AEs ranged from 0.76 per million for stricture to 703.23 per million for repair of an incomplete procedure.

The researchers also found that circumcised newborns had significantly higher risks for wounds, correctional procedures, inflammation, and bleeding than uncircumcised newborns. However, they had lower risks for surgical procedures, penile disorders, gangrene, and infections.

The incidences of AEs varied by age group from 0.40% (95% confidence interval, 0.39% - 0.41%) among boys circumcised as infants, to 9.06% (95% CI, 8.73% - 9.40%) among boys circumcised at age 1 to 9 years, to 5.31% (95% CI, 5.09% - 5.55%) among males circumcised at age 10 years or older. That is an approximately 20-fold increase for boys aged 1 to 9 years and a 10-fold increase for those older than 10 years compared with the AE rate in newborns.

Limitations of the study include uncertainties of the assigned risk windows, generalizability, restriction of procedures to those that had been billed, and lack of inclusion of circumcision in nonmedical settings, such as a religious ceremony.

The researchers conclude that the risk for an AE associated with circumcision performed before 1 year of age is less than 0.5% and that healthcare providers can use this result to counsel parents about whether or not to circumcise their sons.

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