COVID-19 Vaccine Highly Effective Against Adolescent Hospitalizations

Two doses of the BNT162b2 (Pfizer-BioNTech) vaccine were 93% effective against adolescent hospitalization for COVID-19, a case-control study at 19 pediatric hospitals in 16 states showed.

The study provides real-world evidence that the vaccine was highly protective against hospitalization among adolescents even as the Delta variant (B.1.617.2) became the predominant strain. The highly transmissible SARS-CoV-2 variant contributed to a surge in pediatric hospitalizations over the summer and into the early fall. Previously, a clinical trial showed the vaccine was 100% effective against symptomatic COVID-19 among individuals aged 12 to 15 years.

The new study involved 179 individuals aged 12 to 18 years hospitalized for laboratory-confirmed COVID-19 and a control group of 285 adolescents hospitalized for other causes between June and September 2021. It excluded partially vaccinated individuals.

Vaccination coverage was 3% in the COVID-19 group and 33% in the control group. Six vaccinated patients were hospitalized for COVID-19, and none were admitted to the intensive care unit (ICU) or died. In contrast, 173 unvaccinated patients were hospitalized for COVID-19, 77 were admitted to ICUs, and 29 required life support, including 2 who died. Unvaccinated patients with COVID-19 stayed a median of 5 days in the hospital, 2 days longer than their vaccinated peers with the illness.

Only 46% of US children and adolescents aged 12 to 15 years and 54% aged 16 to 17 years were vaccinated when the study was published. Boosting these rates could help prevent severe COVID-19 in the US, the authors wrote.

“[A]s in-person school attendance increases, multicomponent preventive measures to reduce the incidence of severe COVID-19 among adolescents, including vaccination, are imperative,” the authors wrote.

Unhygienic Practices Lead to Routine Vaccination-Linked Infections

Poor practices at a third-party health care company hired in 2018 to provide routine workplace vaccinations in 3 states led to 101 vaccine-associated adverse events, an investigation by the CDC and state public health authorities found.

In December 2018, local public health officials alerted the Kentucky Department of Public Health that 3 individuals had developed injection-site abscesses after receiving vaccinations administered by the company’s staff. Investigators discovered that unlicensed and untrained staff were administering the vaccines without the company physician’s supervision. Staff did not use proper hand hygiene protocols, and vaccine doses were predrawn from multidose vials and stored in syringes for hours to weeks alongside food in dormitory-style mini refrigerators without temperature monitoring, practices contrary to CDC recommendations.

The investigation identified 24 businesses in Kentucky, Indiana, and Ohio where the company administered influenza; hepatitis A; pneumococcal; or Tdap (tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis) vaccines to 940 people. Authorities notified vaccine recipients and interviewed 179 of them. More than half reported signs of an injection-site infection, including redness or swelling; a nodule, pustule, or abscess; or drainage at the site. Of this group, three-quarters sought medical care and more than a third underwent incision and drainage procedures. A nontuberculosis-causing mycobacterium, Mycobacterium porcinum, which is often found in soil, dust, drinking water, and refrigerator ice, was detected in 30 injection-site wound samples.

The effectiveness of the vaccines administered by the company is also in question as 4 predrawn syringes of influenza vaccine had lower-than-expected levels of the hemagglutinin antigen and 2 vials had no detectable antigen. The authors concluded that contamination likely occurred during syringe preparation and was exacerbated by improper storage.

The authors advised clinicians to report injection-site infections through the Vaccine Adverse Event Reporting System—none did in the study—and to contact their local and state health departments.

— Bridget M. Kuehn, MSJ

Note: Source references are available through embedded hyperlinks in the article text online.