Safety of intradermal Bacillus Calmette-Guérin (BCG) vaccine for neonates in Eastern Saudi Arabia

Ahmed R. Alsuwaidi
Department of Pediatrics
United Arab Emirates University
Al Ain, United Arab Emirates

To the Editor

I read with interest the paper by Al-Salem et al entitled "Safety of intradermal Bacillus Calmette-Guérin (BCG) vaccine for neonates in Eastern Saudi Arabia".[1] The authors' conclusion that BCG vaccine is safe is contradicted by the high incidence (3.12 per 1000) of BCG vaccine-associated lymphadenitis that they have reported. The alarming high incidence of this complication is confirmed by similar reports from the region. Recently, Alrabiaah et al[2] has reported an outbreak of BCG-related lymphadenitis in Saudi children with an incidence rate of 10.14 per 1000 in 2010. Interestingly, in both these studies, the BCG SSI was the strain used for vaccination. We have observed a similar high incidence (4.3 per 1000) among children in Al Ain, United Arab Emirates where the same strain is currently used.

The authors have also reported on a child with bilateral axillary BCG lymphadenitis with no identified immune abnormalities. However, they did not mention what work up has been carried out. Disorders of IL-12-IFN-gamma axis are associated with disseminated BCG infection, and are not necessarily always investigated as part of the initial standard immunological work up. Although this patient was reported to have normal immune system, the possibility of an abnormality in the IL-12-IFN-gamma circuit cannot be excluded as a cause of the bilateral axillary BCG lymphadenitis.[3] It is surprising that the authors limited their observations of the outcomes to just 72 hours after the excision procedure. Complications that might have developed after that time could easily have been missed, possibly misleading the authors in stating that the procedure was entirely safe.

Another concern is that the authors' recommendations that all BCG suppurative lymphadenitis require excision is not based on, nor supported by the data in their manuscript. It is, at most, a personal opinion but certainly not a conclusion based on their study. Such recommendations should be based on robust evidence. Only future properly designed interventional studies will be able to provide a good level of evidence for any intervention to recommend for this increasingly reported complication.

Reply from the Author

I want to thank Dr. Alsuwaidi for his valuable comments regarding our manuscript. We reported an incidence of 3.12 BCG related complications per 1000 vaccinated newborns. If we exclude the local collection at the immunization site, which is a minor complication, the incidence of BCG related lymphadenitis was 2.9 per 1000 newborns. This is slightly high but much lower than that reported from other countries, such as Turkey - 0.7%, Chile - 0.7%, Canada - 1%, Jamaica - 1.9%, Iran - 5.8%, and South Africa - 0.5%.[4-7] Although, the use of BCG vaccine may be associated with side effects, the potential morbidity and mortality from tuberculosis outweighs that from BCG related complications.

We do agree with Dr. Alsuwaidi that the BCG SSI strain is the main reason for the relatively high incidence of BCG-related lymphadenitis in our patients. This was also the observation by other authors from the Kingdom of Saudi Arabia.[2] One of our patients had bilateral axillary lymphadenitis. This is unusual but not an unknown complication of BCG. We do agree with Dr. Alsuwaidi that disorders of IL-12-IFN-gamma axis are associated with disseminated BCG infection. Our patient was well at presentation, did not have evidence of disseminated BCG infection, and on follow-up he was well. He was investigated and was found immunocompetent.

We did not investigate him for IL-12-IFN-gamma axis, as he was well with no other manifestations. We do limit observing our patients in the hospital for 48-72 hours. This is sufficient time to look for acute post-operative complications. Subsequently, our patients are followed up in the clinic where they are examined for side effects, mainly collection at the excision site. We do agree with Dr. Alsuwaidi that our recommendation that all BCG suppurative lymphadenitis require excision is a personal recommendation based on our results. Our study is a retrospective one, and currently we are prospectively comparing simple aspiration to total excision in the management of BCG suppurative lymphadenitis. This was also our recommendation at the end of our manuscript.

Ahmed H. Al-Salem
Department of Pediatric Surgery
Maternity and Children Hospital
Dammam, Kingdom of Saudi Arabia

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