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BCG vaccine and immunodeficiency

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Tuberculosis (TB) is considered by WHO as global health emergency in 1993. In 2011 one third of the world's population was thought to be infected with TB and 8.7 million cases of active TB annually. BCG vaccine is one of the effective control measures to prevent TB. It is in practice since 1960s where TB is highly prevalent and 120 million BCG vaccines are given annually that is effective in preventing severe disease of extrapulmonary TB. However, BCG vaccine is live attenuated vaccine that potentially could cause infection, with an incidence between 1:10,000 to 1:1,000,000 and significantly higher when given to immunodeficient infants. Immunodeficient infants who receive BCG vaccine at birth could develop disseminated BCGitis, which is associated with high morbidity and mortality. However, those who develop disseminated BCGitis usually require hospital admissions and multiple medications with high cost and low survival rate ranging between 0% to 65% worldwide. Our center; KAMC-WR, Jeddah Saudi Arabia, has 83% survival rate of treating patients with disseminated BCGitis, but with using cytokine therapy and aminoglycoside drug in addition to common anti-TB drugs. There is high rate of Primary Immunodeficiency Diseases (PID) in the Middle East and Ministry of Health in Saudi Arabia recently succeeded in moving the BCG vaccine to 6-month of age, instead of giving it at birth, in order to have time for diagnosing PID. WHO considers the development of new TB vaccines a major public health priority. BCG vaccine is one of the effective preventive measures of TB; however, it could cause serious complications with low revival rate. Moving the BCG vaccine to 6-month of age will give time for diagnosing PID. Using cytokine therapy and aminoglycoside drug in addition to common anti-TB drugs will significantly reduce mortality and morbidity. There are potentials for development of new BCG vaccine.

Biography

Daifulah Alzahrani has completed his Bachelor of degree of Medicine and Surgery from King Saud University and Pediatric Residency training Program from University of B.C. Vancouver, Canada. He is currently working as a Consultant in Allergy, Immunology and BMT at King Saud Bin Abdul-Aziz University for Health Sciences, Saudi Arabia.