IDF Medical Advisory Committee Resolution on Vaccination for Primary Immunodeficiency Patients on Immunoglobulin Replacement Therapy

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The utility of vaccination during treatment with intravenous or subcutaneous immune globulin (Ig) therapy is not fully understood, in part due to complexity of the range of underlying immune defects treated with Ig therapy. Assessing patients' antibody responses to vaccine is confounded by antibody in infused Ig. Vaccines can also stimulate T cell responses, which may have antibody-independent protective effects, but those are harder to measure and even less well understood with respect to their role in protection independent of immune globulins.

Purified protein, polysaccharide or non-viable whole-agent vaccines pose no infectious risk to patients. However, for most vaccines, the patient's antibody response is likely to be inferior to what is provided by Ig therapy. New vaccine agents may be exceptions to this general rule. For example, antibody to new strains of influenza may not be found in therapeutic Ig, and consideration should be given to administering such a vaccine to patients receiving Ig treatment. Although there may be theoretical benefit to inducing T cell responses in patients on Ig, clinical benefit is unproven, and this practice may not be cost-effective, particularly for expensive vaccines such as HPV.

The administration of live vaccines poses more complex issues, since live attenuated agents can cause severe disease in individuals with profound T cell dysfunction (e.g., severe combined immunodeficiency), while patients with more preserved T cell responses may develop some protection. Unfortunately the distinction is not always readily determined. Therefore, while there may be some recipients of Ig therapy who could safely receive live vaccines, we recommend avoiding administration of live vaccines to recipients of Ig replacement. Since the majority of vaccine-conferred protection is humoral, the protection theoretically provided by vaccination is likely subsumed by the Ig administration. Indeed, several live virus vaccines are neutralized by antibody in Ig preparations, leading the AAP Committee on Infectious Disease to state that MMR and varicella vaccines should not be administered within 6-9 months of exogenous Ig administration.

In view of the issues mentioned above, no simple recommendation regarding vaccination in the setting of ongoing Ig therapy can be made without further studies. There is no specific risk to the use of non-living vaccines in Ig recipients, but such use may not be beneficial or cost-effective. A strong case can be made for withholding all routine vaccines (except influenza) from patients on Ig therapy on the grounds that these patients can be demonstrated to already possess protective immunity. Vaccination is not needed and represents an unnecessary procedure and expense for these patients. Influenza vaccine may be an exception. While benefit of killed vaccine against new strains of influenza for patients receiving Ig is not formally proven, we find sufficient theoretical justification to recommend its use. Decisions regarding use of other killed vaccines must be made on an individual basis. We recommend against the use of any live vaccines in those currently or recently receiving Ig therapy.