VACCINATION GUIDELINES FOR HAEMATOLOGICAL MALIGNANCIES: INSIGHTS AND CHALLENGES

Recently, new Belgian vaccination recommendations for patients with haematological malignancies were published in the Belgian Journal of Haematology (BJH),[1-7] and presented during the Belgian Haematology Society General Annual Meeting (BHS-GAM).[8] In this interview, **Prof. Dr. Carlos Graux (CHU UCLouvain Namur, Belgium)**, member of the BHS vaccination advisory committee and co-author on the vaccination guidelines, discusses the motivation behind these guidelines, key recommendations, challenges, and their clinical implementation.

WHAT WERE THE MAIN OBJECTIVES FROM THE BHS TO INITIATE THESE GUIDELINES, AND WHICH CLINICAL ISSUES OR GAPS WERE ADDRESSED?

The primary objective of updating the BHS vaccination guidelines was to incorporate advancements in both vaccine technology and treatment modalities. Previous guidelines from 2014 (for haematopoietic stem cell transplant [HSCT] recipients) and 2020 (for non-transplant patients), had become outdated due to significant new therapies like CAR T-cells, bispecific monoclonal antibodies, and other emerging treatments. These therapies create new immunodeficiencies that necessitate revised vaccination strategies. Alongside incorporating new evidence on vaccines and treatment, the updated guidelines aim to stimulate broader reflection on vaccination practices, encouraging a more proactive and individualised approach. The updated guidelines also seek to improve reimbursement policies, especially in Wallonia, where post-HSCT vaccine coverage is limited. Ultimately, these revisions are designed to ensure that vaccination recommendations are in line with current scientific understanding and clinical practice.

HOW DO THESE GUIDELINES COMPARE TO EXISTING NATIONAL OR INTERNATIONAL STATEMENTS?

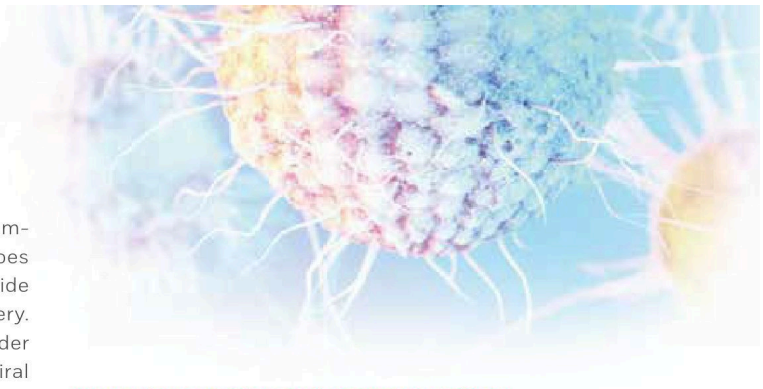
The goal was not to replicate existing efforts, but to enhance national and international guidelines through a comprehensive literature review. This allowed for the integration of new findings into clinical practice while addressing the specific needs of immunocompromised patients with haematological malignancies. A key feature of these guidelines is their applicability, providing clinicians with clear, actionable recommendations.

HOW DID YOU BALANCE AVAILABLE EVIDENCE WITH CLINICAL URGENCY WHEN FORMULATING RECOMMENDATIONS FOR NEWER VACCINES?

Formulating recommendations for newer vaccines was challenging, as clinical trials often exclude patients with haematological malignancies. This left a gap in data on vaccine efficacy for this group. As a result, we relied on expert consensus and data from the general population while addressing the unique needs of these patients. A key example of this challenge is the recombinant adjuvanted herpes zoster vaccine (Shingrix), which, although lacking specific studies in allogeneic HSCT patients, has demonstrated strong efficacy and safety in post-autologous HSCT patients.[4,5,9] This makes it a viable vaccination option despite the absence of direct evidence for allogeneic HSCT patients.

WHAT ARE THE PRIMARY RECOMMENDATIONS FOR VACCINATING PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES?

The guidelines emphasise ensuring vaccinations are up to date before starting a treatment that impairs immune function, such as splenectomy or monoclonal antibodies. However, in immunocompromised patients, the risk of infections remains high even with vaccines, and vaccine effectiveness may be reduced. It is what I call “the paradox of vaccination in immunocompromised individuals”. Another key point is that life attenuated vaccines, such as the measles-mumps-rubella (MMR) vaccine, should be administered only after sufficient immune recovery, usually at least two years after allogeneic HSCT. This is crucial because there is a risk of the disease developing despite attenuation. The non-live vaccine recombinant herpes zoster vaccine is indicated



in preventing herpes zoster infections in immunocompromised adults.[9] Since the herpes zoster vaccine does not cover herpes simplex it should be used alongside antiviral prophylaxis until possible full immune recovery. In general, vaccination should be part of a broader infection prevention strategy that includes antiviral drugs, immunoglobulin replacement, and other protective measures like mask-wearing.

DO VACCINE CHARACTERISTICS MEANINGFULLY CHANGE THE RISK-BENEFIT ASSESSMENT FOR VACCINATION IN SEVERELY IMMUNOCOMPROMISED PATIENTS?

Vaccine characteristics (*e.g.* live/non-live, adjuvants, broad antigen coverage) significantly influence the risk-benefit assessment, and the herpes zoster vaccine is a prime example of this. As mentioned above, the herpes zoster vaccine is a non-live vaccine with adjuvants that enhance the immune response,[9] making it a more suitable option for immunocompromised patients. Although data on newer adjuvanted vaccines, such as those for influenza and respiratory syncytial virus (RSV), are still limited, these vaccines are expected to improve immune responses in patients with weakened immune systems.

HOW DO THE RECOMMENDATIONS ADDRESS THE TIMING OF VACCINATION IN RELATION TO TREATMENT SCHEDULES?

The timing of vaccination is crucial in immunocompromised patients. Vaccines should not be administered immediately after treatments like HSCT or CAR T-cell therapy, as the immune system needs recovery time. Vaccination is generally recommended 6 to 12 months after HSCT, once minimal immune recovery is evident. For ongoing immunosuppression, vaccines like the influenza vaccine may be given during active treatment, with a second dose later to boost efficacy. For patients receiving prolonged or repeated immunosuppression, booster doses or revaccination strategies may be necessary.

HOW SHOULD HEALTHCARE PROVIDERS INTEGRATE THESE VACCINATION GUIDELINES INTO THEIR CLINICAL PRACTICE?

The publication of these new vaccination recommendations is an important step in raising awareness among haematologists about the importance of vaccination in patient care, encouraging a case-by-case approach. Preventive measures like vaccination are often overlooked during time-limited consultations, where immediate concerns such as diagnosis and treatment take precedence. Close collaboration between haematologists, general practitioners, and oncology care coordinators is essential, and appropriate funding must be allocated for managing innovative therapies like CAR T-cell therapy and vaccines.

WHAT CAN BE DONE TO BETTER INFORM PATIENTS AND HEALTHCARE PROVIDERS ABOUT THESE RECOMMENDATIONS?

Education is key to ensure that vaccination recommendations are implemented. Direct communication from healthcare providers is the most effective method to ensure patients understand the importance of vaccination. Equally important is educating future healthcare professionals. In my practice, I make it a priority to educate medical, pharmacy, and biomedical students about the complexities of vaccinating immunocompromised patients. By addressing these challenges early in their training, we can ensure that the next generation of clinicians is better prepared to manage these complex patients.

HOW DO YOU EXPECT THESE GUIDELINES TO EVOLVE IN THE FUTURE?

As the landscape of haematological treatment and immunotherapy continues to evolve, vaccination guidelines will need to adapt accordingly. When elaborating new therapeutic strategies for haematological malignancies it is important to favour those who have the least impact on immunity and response to vaccines like fixed-duration regimens. Future updates will be guided by new therapeutic approaches and emerging data, ensuring that immunocompromised patients receive the best possible vaccination strategies.

CONCLUSION

These updated guidelines[1-7] represent a significant advancement in the care of immunocompromised patients with haematological malignancies. Successful implementation will require ongoing education for both patients and healthcare providers, as well as better integration into oncology care pathways. By addressing vaccination needs in a proactive and systematic way, these guidelines aim to improve patient outcomes by reducing the risk of infections and enhancing clinical care.

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