Immunoglobulin replacement following CAR-T therapy in adults and children in Manchester

Infection is common following CAR-T therapy, and not all infections can be prevented with pharmacologic prophylaxis. These infections cause a significant burden of morbidity, mortality and healthcare cost.

The majority of international guidelines recommend immunoglobulin prophylaxis post CAR-T therapy. The following algorithm has been devised following literature review, incorporating international guidelines and clinical expertise within the CAR-T teams across Manchester.

- Patients should have their immunoglobulin levels monitored monthly for the first 6 months following CAR-T therapy to confirm if / when hypogammaglobulinaemia develops; following this time the frequency of monitoring should be based on evidence of immune reconstitution and infection background
- All patients should maintain a record of infections, including where possible microbiology results
- All patients will be managed with chemoprophylaxis of infection in line with guidelines
- All patients should receive immunisations in line with guidelines

Primary disease	Serum IgG post CAR-T infusion	Frequency of infection (per 6 months)	Recommendation
B-ALL	<4 g/L	Any	Commence Ig
Not B-ALL	<4 g/L	≤2	Discuss with Ig panel
	<4 g/L	High (>2)	Commence Ig
	≥4 g/L	Any	Discuss with Ig panel / observe

Stopping criteria (all must be met):

1. Loss of B cell aplasia / recovery of IgM / immune reconstitution of B cells
2. No infections for last 6 months

When stopping immunoglobulin consideration should also be given to the time of year. Respiratory tract infections are more frequent during winter months and therefore it is generally not recommended to stop immunoglobulin in Autumn or Winter.

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