Inborn errors of immunity (IEI) (primary immunodeficiency diseases) with antibody deficiency

Condition for which Ig has an established therapeutic role.

Specific Conditions	• Severe combined immunodeficiency (SCID) • Combined immunodeficiency generally less profound than SCID (e.g. thymoma) • Combined immunodeficiency with associated or syndromal features (e.g. Wiskott Aldrich syndrome; ataxia telangiectasia) • Severe reduction in all Ig isotypes with decreased or absent B-cells (e.g. XLA def) • Severe reduction in at least 2 Ig isotypes with low/normal B-cells (e.g. CVID) • Severe reduction in serum IgG and IgA with normal/elevated IgM (e.g. CD40L def) • Transient hypogammaglobulinaemia of infancy • Lymphoproliferative syndromes (e.g. XLP1, XLP2, CD27 def) • Possible common variable immune deficiency (CVID) - below normal serum IgG but normal serum IgA level
Indication for Ig Use	• Replacement therapy in common variable immune deficiency (CVID) – ESID diagnostic criteria met • Replacement therapy in possible common variable immune deficiency (CVID) – below normal serum IgG but normal serum IgA level • Replacement therapy in transient hypogammaglobulinaemia of infancy (children aged less than 4 years) • Replacement therapy in recognised inborn errors of immunity for which immunoglobulin replacement is universally indicated (e.g. SCID, Wiskott-Aldrich syndrome, etc.)
Level of Evidence	Evidence of probable benefit – more research needed (Category 2a)
Description and Diagnostic Criteria	More than 480 inborn errors of immunity (IEI, also known as primary immunodeficiency diseases (PIDs)) have been identified. Many of these cause antibody deficiency. In some cases, antibody deficiency is associated with B-cell deficiency (e.g. X-linked agammaglobulinaemia), while in others, B-cells are present. Antibody deficiency can be the only manifestation of IEI, or there can be other defects as well (e.g. T-cell deficiency, autoimmunity). Not all IEIs cause antibody defects, therefore immunoglobulin replacement is not always indicated. Recognised inborn errors of immunity for which immunoglobulin replacement is universally indicated are: X-linked and autosomal recessive agamma/hypogammaglobulinaemia, severe combined immunodeficiency, combined immunodeficiencies such as DOCK8 deficiency, Wiskott-Aldrich syndrome, X-linked lymphoproliferative syndrome, hyper IgM syndrome and severe T-cell immunodeficiency. In some of these conditions, antibody levels may not be reduced at the time of diagnosis due to transplacental immunoglobulin or a functional rather than quantitative defect. The European Society for Immunodeficiency Diseases (ESID) diagnostic criteria for PID have been used as a guide in the development of the qualifying criteria for Ig therapy in Australia. It is acknowledged that a low IgG alone is not a sufficient indication for immunoglobulin replacement. Genetic diagnoses are continually being updated as described in the classification system for the International Union of Immunology Societies (IUIS). It is recognised that genetic diagnoses are not always possible.
Justification for Evidence Category	The Biotext (2004) review reported level 2a evidence for the use of intravenous immunoglobulin (IVIg) in the treatment of common variable immunodeficiency and primary hypogammaglobulinaemia.
Diagnosis Requirements	A diagnosis must be made by an Immunologist.

Qualifying Criteria for Ig Therapy

Replacement therapy in common variable immune deficiency (CVID) – ESID diagnostic criteria met

Note: If less than 2 years the request must be under the indication **Transient hypogammaglobulinaemia of infancy (children aged less than 4 years)**

- The patient is older than 2 years of age

AND

Blood samples for IgG and IgA testing should be taken on 2 occasions, at least one hour apart and at least one sample taken when the patient does not have an infection.

- Evidence of a marked decrease of IgG and a marked decrease of IgA with or without low IgM levels

AND

- Documented failure of serum antibody response after vaccination with conjugated or unconjugated pneumococcal vaccine or following protein vaccine challenge

  OR

- The patient's serum IgG is less than 2 g/L and a delay to providing Ig replacement (e.g. following an invasive bacterial infection) would present significant risk

  OR

- The patient has absent haemagglutinins (if not blood group AB)

  OR

- The patient has low switched memory B cells (less than 70 percent of age-related normal value)

AND

- The patient has demonstrated an increased susceptibility to infection

  OR

- The patient has autoimmune manifestations, granulomatous disease, unexplained polyclonal lymphoproliferation or an affected family member with antibody deficiency

Initial review by an immunologist is required at 6 months and annually thereafter. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

The review criteria for inborn errors of immunity are to ensure adequate replacement of antibody deficiency and to demonstrate clinical benefit from treatment.

Replacement therapy in possible common variable immune deficiency (CVID) – below normal serum IgG but normal serum IgA level

A low IgG (normal IgA with or without a low IgM) alone is not a sufficient indication for immunoglobulin replacement therapy. Many patients will be well despite the finding of a serum IgG below the normal range for age.

- The patient is older than 4 years of age

AND

Blood samples for IgG testing should be taken on 2 occasions, at least one hour apart and at least one sample taken when the patient does not have an infection.

- Evidence of a marked decrease of IgG with normal IgA (with or without low IgM) levels

AND

- Documented failure of serum antibody response after vaccination with conjugated or unconjugated pneumococcal vaccine or following protein vaccine challenge

  OR

- The patient's serum IgG less than 2 g/L and a delay to providing Ig replacement (e.g. following an invasive bacterial infection) would present significant risk

  OR

- The patient has absent haemagglutinins (if not blood group AB)

  OR

- The patient has low switched memory B cells (less than 70 percent of age-related normal value)

AND

- The patient has demonstrated an increased susceptibility to infection

  OR

- The patient has autoimmune manifestations, granulomatous disease, unexplained polyclonal lymphoproliferation or an affected family member with antibody deficiency

Initial review is required by an Immunologist at 6 months and ongoing reviews at least annually to assess clinical benefit. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

Cessation of Ig therapy should be considered at least after each 12 months of treatment. If serum IgM and IgA levels are trending upwards and near normal, this may suggest recovery of the immune system and a trial might be considered if the patient is well. Once the patient has normal IgA and IgM levels, the IgG is also likely to be normal and a trial off therapy may be undertaken.

Ig therapy should be extended as required to enable cessation of therapy in September/October, with repeat clinical and/or immunological evaluation before re-commencement of therapy.

This should particularly be considered in patients who do not have active bronchiectasis and/or suppurative lung disease. An immunoglobulin washout period of 4 to 6 months is necessary to enable an accurate assessment. Prophylactic antibiotics may be considered to cover the period of cessation of immunoglobulin therapy.

Please note: A diagnosis of bronchiectasis and/or suppurative lung disease must be consistent with the position statement of the Thoracic Society of Australia and New Zealand (Chang AB et al, 2023).

Replacement therapy in transient hypogammaglobulinaemia of infancy (children aged less than 4 years)

The majority of young children with transient hypogammaglobulinaemia do not require immunoglobulin (Ig) therapy. However, if the patient has had recurrent suppurative infections that threaten organ function, review by an immunologist is recommended for consideration of Ig therapy. Some patients may require treatment during the winter months only, and others will benefit from more prolonged treatment.

Blood samples for IgG testing should be taken on 2 occasions, at least one hour apart and at least one sample taken when the patient does not have an infection.

- Younger than 4 years of age at diagnosis

  AND

- Evidence of a marked decrease of IgG

AND

- The patient has demonstrated an increased susceptibility to infection

Initial review is required by an Immunologist, at 6 months, and ongoing reviews at least annually to assess clinical benefit. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

Cessation of Ig therapy should be considered at least after 24 months of treatment. If serum IgM and IgA levels are trending upwards and close to normal, this may suggest recovery of the immune system and a trial off therapy might be considered if the patient is well. Once the patient has normal IgA and IgM levels, the IgG is also likely to be normal and a trial off therapy should be undertaken.

Ig therapy should be extended as required to enable cessation of therapy in September/October, with repeat clinical and/or immunological evaluation before recommencement of therapy.

When the child is 4 years old, a decision must be made regarding a trial off treatment or qualification may be appropriate under a different indication such as possible or confirmed CVID.

Replacement therapy in recognised inborn errors of immunity for which immunoglobulin replacement is universally indicated (e.g. SCID, Wiskott-Aldrich syndrome, etc.)

Blood samples for IgG testing should be taken on 2 occasions, at least one hour apart and at least one sample taken when the patient does not have an infection.

- Confirmed or suspected diagnosis of inborn error of immunity

  AND

- Evidence of hypogammaglobulinaemia

OR

- No evidence of hypogammaglobulinaemia, with a confirmed diagnosis of severe combined immunodeficiency (SCID) or any other proven congenital immunodeficiency impacting on antibody production, in which immunoglobulin replacement is universally indicated

Initial review by an Immunologist is required at 6 months, with reviews annually thereafter. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

Where a diagnosis has initially been suspected, confirmation will be required for access to continuing Ig therapy.

Exclusion Criteria

Acquired hypogammaglobulinaemia secondary to haematological malignancy or post HSCT - see Acquired hypogammaglobulinaemia — haematological malignancy or post HSCT
Specific antibody deficiency - see Specific antibody deficiency (SAD)
IgG subclass deficiency - see Specific antibody deficiency (SAD)
Secondary hypogammaglobulinaemia unrelated to haematological malignancy or stem cell transplantation - see Secondary hypogammaglobulinaemia (including iatrogenic immunodeficiency)

Review Criteria for Assessing the Effectiveness of Ig Use

Replacement therapy in common variable immune deficiency (CVID) – ESID diagnostic criteria met

Initial review by an immunologist is required at 6 months and annually thereafter. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

The review criteria for inborn errors of immunity are to ensure adequate replacement of antibody deficiency and to demonstrate clinical benefit from treatment.

Clinical effectiveness of Ig therapy may be assessed by:

On review of the initial authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

  AND
- A diagnosis of CVID has been made

On review of a continuing authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

Replacement therapy in possible common variable immune deficiency (CVID) – below normal serum IgG but normal serum IgA level

Initial review is required by an Immunologist at 6 months and ongoing reviews at least annually to assess clinical benefit. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

Cessation of Ig therapy should be considered at least after each 12 months of treatment. If serum IgM and IgA levels are trending upwards and near normal, this may suggest recovery of the immune system and a trial off therapy might be considered if the patient is well. Once the patient has normal IgA and IgM levels, the IgG is also likely to be normal and a trial off therapy may be undertaken.

Ig therapy should be extended as required to enable cessation of therapy in September/October, with repeat clinical and/or immunological evaluation before re-commencement of therapy.

This should particularly be considered in patients who do not have active bronchiectasis and/or suppurative lung disease. An immunoglobulin washout period of 4 to 6 months is necessary to enable an accurate assessment. Prophylactic antibiotics may be considered to cover the period of cessation of immunoglobulin therapy.

Clinical effectiveness of Ig therapy may be assessed by:

On review of the initial authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

AND

There should be regular consideration of a trial period of cessation of Ig for the purposes of immunological evaluation unless medically contraindicated on safety grounds (for example active bronchiectasis and/or suppurative lung disease, neutropenia, or ongoing immunosuppressant medication) or where there is persistence of the underlying condition that would result in severe hypogammaglobulinaemia in the absence of Ig replacement therapy. Trial cessation is best commenced in September or October.

- When IgA and IgM are trending upwards and close to normal and the patient is well, a trial off therapy (in September or October) is considered to allow immunological re-evaluation, unless medically contraindicated

On review of a continuing authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

AND

There should be regular consideration of a trial period of cessation of Ig for the purposes of immunological evaluation unless medically contraindicated on safety grounds (for example active bronchiectasis and/or suppurative lung disease, neutropenia, or ongoing immunosuppressant medication) or where there is persistence of the underlying condition that would result in severe hypogammaglobulinaemia in the absence of Ig replacement therapy. Trial cessation is best commenced in September or October.

- When IgA and IgM are trending upwards and close to normal and the patient is well, a trial off therapy (in September or October) is considered to allow immunological re-evaluation, unless medically contraindicated

Antibiotic therapy may be indicated in addition to immunoglobulin therapy.

Please note: A diagnosis of bronchiectasis and/or suppurative lung disease must be consistent with the position statement of the Thoracic Society of Australia and New Zealand (Chang AB et al, 2023).

Replacement therapy in transient hypogammaglobulinaemia of infancy (children aged less than 4 years)

Initial review is required by an Immunologist, at 6 months, and ongoing reviews at least annually to assess clinical benefit. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

Cessation of Ig therapy should be considered at least after 24 months of treatment. If serum IgM and IgA levels are trending upwards and close to normal, this may suggest recovery of the immune system and a trial might be considered if the patient is well. Once the patient has normal IgA and IgM levels, the IgG is also likely to be normal and a trial off therapy should be undertaken.

Ig therapy should be extended as required to enable cessation of therapy in September/October, with repeat clinical and/or immunological evaluation before re-commencement of therapy.

When the child is 4 years old, a decision must be made regarding a trial off treatment or qualification may be appropriate under a different indication such as possible or confirmed CVID.

Clinical effectiveness of Ig therapy may be assessed by:

On review of the initial authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

AND

There should be regular consideration of a trial period of cessation of Ig for the purposes of immunological evaluation unless medically contraindicated on safety grounds (for example active bronchiectasis and/or suppurative lung disease, neutropenia, or ongoing immunosuppressant medication) or where there is persistence of the underlying condition that would result in severe hypogammaglobulinaemia in the absence of Ig replacement therapy. Trial cessation is best commenced in September or October.

- When IgA and IgM are trending upwards and close to normal and the patient is well, a trial off therapy (in September or October) is considered to allow immunological re-evaluation, unless medically contraindicated

On review of a continuing authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

AND

There should be regular consideration of a trial period of cessation of Ig for the purposes of immunological evaluation unless medically contraindicated on safety grounds (for example active bronchiectasis and/or suppurative lung disease, neutropenia, or ongoing immunosuppressant medication) or where there is persistence of the underlying condition that would result in severe hypogammaglobulinaemia in the absence of Ig replacement therapy. Trial cessation is best commenced in September or October.

- When IgA and IgM are trending upwards and close to normal and the patient is well, a trial off therapy (in September or October) is considered to allow immunological re-evaluation, unless medically contraindicated

Antibiotic therapy may be indicated in addition to immunoglobulin therapy.

Please note: A diagnosis of bronchiectasis and/or suppurative lung disease must be consistent with the position statement of the Thoracic Society of Australia and New Zealand (Chang AB et al, 2023).

Replacement therapy in recognised inborn errors of immunity for which immunoglobulin replacement is universally indicated (e.g. SCID, Wiskott-Aldrich syndrome, etc.)

Initial review by an Immunologist is required at 6 months, with reviews annually thereafter. Documentation of clinical effectiveness is necessary for continuation of Ig therapy.

The review criteria for inborn errors of immunity are to ensure adequate replacement of antibody deficiency and to demonstrate clinical benefit from treatment.

Clinical effectiveness of Ig therapy may be assessed by:

On review of the initial authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

  AND
- A diagnosis of an inborn error of immunity has been confirmed

On review of a continuing authorisation period

- Monitoring of serum immunoglobulin levels (IgG, IgA and IgM) and any history of infection

Dose

Replacement therapy in common variable immune deficiency (CVID) – ESID diagnostic criteria met

- **Loading Dose (IVIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as subcutaneous immunoglobulin.

- **Disseminated Enterovirus Dose (IVIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as subcutaneous immunoglobulin.

- **Maintenance Dose (IVIg)** - 0.4-0.6 g/kg every 4 weeks or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1 g/kg may be given over any 4 week period.

  This dose is also available as subcutaneous immunoglobulin.

- **Supplementary Dose (IVIg)** - One additional dose of 0.4g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as subcutaneous immunoglobulin.

- **Loading Dose (SCIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as intravenous immunoglobulin.

- **Disseminated Enterovirus Dose (SCIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as intravenous immunoglobulin.

- **Maintenance Dose (SCIg)** - 0.1-0.15 g/kg every week or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1 g/kg may be given over any 4 week period.

  This dose is also available as intravenous immunoglobulin.

- **Supplementary Dose (SCIg)** - One additional dose of 0.4g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4g/L. Please provide IgG level in comment box below.

  This dose is also available as intravenous immunoglobulin.

The aim should be to use the lowest dose possible that achieves the appropriate clinical outcome for each patient.

Refer to the current product information sheet for further information on dose, administration and contraindications.

Replacement therapy in possible common variable immune deficiency (CVID) – below normal serum IgG but normal serum IgA level

- **Loading Dose (IVIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as subcutaneous immunoglobulin.
- **Disseminated Enterovirus Dose (IVIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as subcutaneous immunoglobulin.
- **Maintenance Dose (IVIg)** - 0.4–0.6g/kg every 4 weeks or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1g/kg may be given over any 4 week period.

  This dose is also available as subcutaneous immunoglobulin.
- **Supplementary Dose (IVIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as subcutaneous immunoglobulin.
- **Loading Dose (SCIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as intravenous immunoglobulin.
- **Disseminated Enterovirus Dose (SCIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as intravenous immunoglobulin.
- **Maintenance Dose (SCIg)** - 0.1-0.15 g/kg every week or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1g/kg may be given over any 4 week period.

  This dose is also available as intravenous immunoglobulin.
- **Supplementary Dose (SCIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as intravenous immunoglobulin.

The aim should be to use the lowest dose possible that achieves the appropriate clinical outcome for each patient.

Refer to the current product information sheet for further information on dose, administration and contraindications.

Replacement therapy in transient hypogammaglobulinaemia of infancy (children aged less than 4 years)

- **Loading Dose (IVIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as subcutaneous immunoglobulin.

- **Maintenance Dose (IVIg)** - 0.4-0.6 g/kg every 4 weeks or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1 g/kg may be given over any 4 week period.

  This dose is also available as subcutaneous immunoglobulin.

- **Supplementary Dose (IVIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as subcutaneous immunoglobulin.

- **Loading Dose (SCIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as intravenous immunoglobulin.

- **Maintenance Dose (SCIg)** - 0.1-0.15 g/kg every week or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1 g/kg may be given over any 4 week period.

  This dose is also available as intravenous immunoglobulin.

- **Supplementary Dose (SCIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as intravenous immunoglobulin.

The aim should be to use the lowest dose possible that achieves the appropriate clinical outcome for each patient.

Refer to the current product information sheet for further information on dose, administration and contraindications.

Replacement therapy in recognised inborn errors of immunity for which immunoglobulin replacement is universally indicated (e.g. SCID, Wiskott-Aldrich syndrome, etc.)

- **Loading Dose (IVIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as subcutaneous immunoglobulin.

- **Disseminated Enterovirus Dose (IVIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as subcutaneous immunoglobulin.

- **Maintenance Dose (IVIg)** - 0.4-0.6 g/kg every 4 weeks or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1 g/kg may be given over any 4 week period.

  This dose is also available as subcutaneous immunoglobulin.

- **Supplementary Dose (IVIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as subcutaneous immunoglobulin.

- **Loading Dose (SCIg)** - One loading dose of 0.4 g/kg in the first month of therapy (in addition to the maintenance dose) is permitted if the serum IgG level is <4 g/L.

  This dose is also available as intravenous immunoglobulin.

- **Disseminated Enterovirus Dose (SCIg)** - One dose of 2 g/kg at any stage is permitted (in addition to the maintenance dose) in the management of disseminated enterovirus infection.

  This dose is also available as intravenous immunoglobulin.

- **Maintenance Dose (SCIg)** - 0.1-0.15 g/kg every week or more frequently, to achieve IgG trough level of at least the lower limit of the age-specific serum IgG reference range. More frequent dosing to achieve IgG trough level of up to 9 g/L is permitted if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range. A total dose of up to 1g/kg may be given over any 4 week period.

  This dose is also available as intravenous immunoglobulin.

- **Supplementary Dose (SCIg)** - One additional dose of 0.4 g/kg is permitted at any stage (in addition to the maintenance dose) if the serum IgG level is <4 g/L. Please provide IgG level in comment box below.

  This dose is also available as intravenous immunoglobulin.

The aim should be to use the lowest dose possible that achieves the appropriate clinical outcome for each patient.

Refer to the current product information sheet for further information on dose, administration and contraindications.

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