An autosomal recessive CGD diagnosis may be delayed because of milder disease manifestations compared with those of X-linked CGD¹

- Within CGD, the autosomal recessive type is frequent and heterogeneous ¹,²
- It affects both males and females¹,²
- Patients may present later in life compared with X-linked CGD patients²
- Autosomal recessive CGD includes 4 different forms of genetic defects, and this spectrum explains a considerable heterogeneity of disease severity²,⁴

High risk of mortality

Before the introduction of all current components of CGD care, the annual mortality of autosomal recessive CGD was about 2% per year.⁵

- In a European survey conducted over 50 years, autosomal recessive CGD exhibited a 15% rate of mortality⁶

35% of CGD cases are inherited in an autosomal recessive manner.³

Infections may be less frequent for autosomal recessive CGD patients, but morbidity and mortality risks remain high.¹

Reduce the risk of serious infections for autosomal recessive CGD patients

ACTIMMUNE® (Interferon gamma-1b) demonstrated a treatment benefit with respect to time to serious infection* regardless of pattern of inheritance, use of prophylactic antibiotics, or age.⁷

*Serious infection was defined as a clinical event requiring hospitalization and intravenous antibiotics.
ACTIMMUNE® significantly reduces serious infections* in patients with CGD\(^7,8\)

In the clinical trial, ACTIMMUNE® (Interferon gamma-1b) demonstrated significant reductions in total number, rate, and relative risk of serious infections vs placebo

Study methods

<table>
<thead>
<tr>
<th>Design</th>
<th>12-month, multicenter, randomized, double-blind, placebo-controlled clinical trial in the United States and Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>128 patients (age range, 1 to 44 years) with various types of CGD</td>
</tr>
<tr>
<td>Treatment arms</td>
<td>Patients were randomized to receive ACTIMMUNE® (n = 63) or placebo (n = 65) administered subcutaneously 3 times weekly for up to 1 year. Although designed as a placebo-controlled trial, more than 85% of study patients were receiving prophylactic antibiotics (trimethoprim-sulfamethoxazole or dicloxacillin) in addition to either ACTIMMUNE® or placebo.</td>
</tr>
<tr>
<td>Mean duration of treatment</td>
<td>8.9 months</td>
</tr>
<tr>
<td>Primary end point</td>
<td>Time to serious infection, defined as a clinical event requiring hospitalization and the use of intravenous antibiotics</td>
</tr>
</tbody>
</table>

The study reported early results following demonstration of a statistically significant benefit of ACTIMMUNE® therapy compared to placebo with respect to time to serious infection (\(P = .0036\)).

*Serious infection was defined as a clinical event requiring hospitalization and intravenous antibiotics.

Complete your CGD treatment plan with immunomodulatory therapy

ACTIMMUNE® is recommended by the American Academy of Allergy, Asthma & Immunology and the Immune Deficiency Foundation for patients living with CGD and can be taken with prophylaxis therapy.\(^9,10\)
INDICATIONS AND USAGE
ACTIMMUNE® (Interferon gamma-1b) is indicated:
• For reducing the frequency and severity of serious infections associated with Chronic Granulomatous Disease
• For delaying time to disease progression in patients with severe, malignant osteopetrosis

IMPORTANT SAFETY INFORMATION
CONTRAINDICATIONS
• In patients who develop or have known hypersensitivity to interferon-gamma, E coli-derived products, or any component of the product

WARNINGS AND PRECAUTIONS
• ACTIMMUNE should be used with caution in patients with:
  – Pre-existing cardiac conditions, including ischemia, congestive heart failure, or arrhythmia
  – Seizure disorders or compromised central nervous system function; reduce dose or discontinue
  – Myelosuppression, or receiving other potentially myelosuppressive agents; consider dose reduction or discontinuation of therapy
  – Severe renal insufficiency
  – Age <1 year

• Monitoring:
  – Patients begun on ACTIMMUNE before age 1 year should receive monthly assessments of liver function. If severe hepatic enzyme elevations develop, ACTIMMUNE dosage should be modified
  – Monitor renal function regularly when administering ACTIMMUNE in patients with severe renal insufficiency; accumulation of interferon gamma-1b may occur with repeated administration. Renal toxicity has been reported in patients receiving ACTIMMUNE

• Pregnancy, Lactation, and Fertility:
  – ACTIMMUNE should be used during pregnancy only if the potential benefit outweighs the potential risk to the fetus
  – Use of ACTIMMUNE by lactating mothers is not recommended. ACTIMMUNE or nursing should be discontinued dependent on the importance of the drug to the mother
  – Long-term effects of ACTIMMUNE on fertility are not known

DRUG INTERACTIONS
• Concomitant use of drugs with neurotoxic, hematotoxic, or cardiotoxic effects may increase the toxicity of interferons
• Avoid simultaneous administration of ACTIMMUNE with other heterologous serum protein or immunological preparations (eg, vaccines)

ADVERSE REACTIONS
• The most common adverse experiences occurring with ACTIMMUNE therapy are “flu-like” symptoms such as fever, headache, chills, myalgia, or fatigue, which may decrease in severity as treatment continues, and may be minimized by bedtime administration of ACTIMMUNE. Acetaminophen may be used to prevent or partially alleviate the fever and headache
• Isolated cases of acute serious hypersensitivity reactions have been observed in patients receiving ACTIMMUNE
• Reversible neutropenia, thrombocytopenia, and elevations of AST and/or ALT have been observed during ACTIMMUNE therapy
• At doses 10 times greater than the weekly recommended dose, ACTIMMUNE may exacerbate pre-existing cardiac conditions, or may cause reversible neurological effects such as decreased mental status, gait disturbance, and dizziness
