

Imatinib for acute lymphoblastic leukemia (ALL)

Product:

IMATINIB (Gleevec®)
100 mg, 400 mg tablets

Class of drugs:

Anti-cancer agent; Tyrosine kinase inhibitor

Indication:

Treatment of acute lymphoblastic leukemia (ALL)

Manufacturer:

Novartis Pharmaceuticals Canada Inc.

CED Recommendation

The CED recommended that imatinib (Gleevec®) be funded through the Exceptional Access Program for the treatment of Philadelphia chromosome-positive acute lymphoblastic leukemia (Ph+ ALL) according to specific criteria. The CED noted that Ph+ ALL has a poor prognosis and limited treatment options. While imatinib has not been proven to prolong survival, it has been shown to greatly improve remission rates, which is considered to be a meaningful patient health outcome for this disease.

Executive Officer Decision

Based on the CED's recommendation, the Executive Officer decided to fund imatinib (Gleevec®) for the treatment of Ph+ ALL via the Exceptional Access Program according to specific criteria.

Status

Funded through the Exceptional Access Program.

Highlights of Recommendation:

- ♦ Imatinib is an oral anti-cancer drug. It can be used to treat several different types of cancers. This particular CED review assessed the use of imatinib for the treatment of the Philadelphia chromosome-positive subtype of acute lymphoblastic leukemia (Ph+ ALL).
- ♦ Clinical evidence on the use of imatinib in the treatment of Ph+ ALL indicates that when compared against conventional chemotherapy, imatinib greatly improves the likelihood of achieving a disease remission.
- ♦ In the key clinical trial, imatinib was not shown to prolong survival. However, there were limitations in the study design that made it difficult to interpret these results. Furthermore, because Ph+ ALL is an uncommon disease, it is very challenging to conduct rigorous studies that can accurately assess this drug's effect on survival.
- ♦ Imatinib costs approximately \$150 - \$200 per day. Based on available information, it is uncertain whether imatinib for the treatment of Ph+ ALL represents value for money.
- ♦ **Overall, the CED noted imatinib has been demonstrated to provide significant improvements in response rates for the treatment of Ph+ ALL. Given that this disease has a poor prognosis and limited treatment alternatives, the CED recommended that imatinib be funded.**

Background:

Acute lymphoblastic leukemia (ALL) is an aggressive (fast-growing) type of blood cancer in which the body produces too many lymphoblasts (an immature type of white blood cell). Approximately 20 to 30 percent of adult patients with ALL have the Philadelphia chromosome-positive (Ph+) subtype of this disease. Patients with Ph+ ALL have a poor prognosis, low treatment response rates, a short remission duration, and poor survival.

Conventional treatment options for Ph+ ALL include chemotherapy and, in patients who are eligible, stem cell transplant.

Imatinib belongs to a class of drugs called tyrosine kinase inhibitor, which prevents tumor growth by blocking important cellular enzymes.

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Detailed Discussion:

- ♦ The efficacy of imatinib in the treatment Ph+ ALL is supported by a single small randomized controlled study and several small uncontrolled trials.
- ♦ In the key study (Ottmann et al. Cancer 2007), 55 patients with newly diagnosed Ph+ ALL were assigned to receive either an imatinib-based regimen or a chemotherapy-based regimen as their induction therapy. (Induction therapy represents the first phase of treatment.) Study findings showed that patients who were treated with imatinib had a significantly higher complete remission rate versus those who received chemotherapy (96.3% versus 50.0%, respectively; $p=0.0001$).
- ♦ The study reported no significant differences in overall survival or disease-free survival between the two treatment groups. However, the survival data were confounded by the small number of patients enrolled in the study and the fact that patients in both groups subsequently received imatinib in the consolidation phase of treatment.
- ♦ Results from several small uncontrolled studies in patients with newly diagnosed Ph+ ALL also supported that imatinib significantly improves the likelihood of complete remission.
- ♦ Imatinib costs approximately \$150 - \$200 per day. The economic analysis submitted by the manufacturer had many uncertainties; therefore, it is unknown whether imatinib is cost effective.
- ♦ **Overall, imatinib has not been shown to prolong survival but there is compelling evidence that this treatment is associated with clinically significant improvements in complete remission rates. Due to the uncertainties around value for money, the CED recommended that imatinib be funded through the Exceptional Access Program according to specific criteria.**
- ♦ The CED worked jointly with a subcommittee involving cancer experts to review this cancer drug, as it does for all cancer drug treatments.

EAP Funding Criteria:

Funding of imatinib is considered via the Exceptional Access Program (EAP) according to the following criteria:

For adult patients with newly diagnosed Philadelphia chromosome positive acute lymphoblastic leukemia (Ph+ ALL) who are not eligible for stem cell transplantation.

Cancer Care Ontario Information:

Information on Disease Site Evidence-based Series (EBS) and Practice Guidelines (PG):

<http://www.cancercare.on.ca/toolbox/qualityguidelines/diseasesite/>

Information on chemotherapy regimens:

<http://www.cancercare.on.ca/toolbox/drugs/drugformulary/>



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