Impact of Long- versus Short-Acting Growth Factors on Staff Time Consumption and Utilization: A Multi-Center Study (P-5R)

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**Background**

Fatigue is among the most commonly reported symptoms of cancer patients, and is often attributed to anemia.1 The European Cancer Anemia Survey2 indicates:

- 39% of cancer patients are anemic, with significant variation by tumor type, disease status, and treatment approach.
- Among patients not anemic at baseline, 63% develop anemia while undergoing chemotherapy.

Patients often report fatigue more detrimental to their daily lives than other cancer- or treatment-related complications.3 Epoetin alfa (EPO) and darbepoetin alfa (DARB) are each used to treat anemia in patients with cancer. Clinical trials have demonstrated that both agents:
- significantly improve hemoglobin levels
- reduce transfusion requirements, and
- improve quality of life.

**Rationale**

DARB is a modified recombinant form of EPO with a longer half-life, allowing it to be dosed less frequently.4 The frequency of laboratory monitoring (CBCs) may also be reduced versus EPO. Thus, DARB may be associated with reductions in clinic visits and staff time, and these savings may offset—in whole or in part—the EPO advantage in terms of drug acquisition cost.5

To our knowledge, only a single (2-center) study has assessed the impact of long acting growth factors on oncology practice dynamics, finding they lead to significant reductions in healthcare utilization.6 We sought to determine whether similar results would be found in a multi-center study.

**Objectives**

The study was designed to assess:
- staff time requirements for various aspects of oncology clinic visits during which CCBs are obtained and/or growth factor is administered.
- the number of clinic visits, and services provided during these visits, during chemotherapy cycles in which patients received EPO versus DARB.

**Methods**

The study was conducted at 7 oncology centers located in MA, ME, NJ, NM, OH, UT and VA during January—March 2006. The protocol was approved by Western Institutional Review Board.

**Time-Motion Assessment**

Staff time devoted to laboratory activities and growth factor administration were assessed by direct observation of patients visiting each study center by trained nurses. Consecutive patient visits were observed until the desired sample size was obtained. Stopwatch timings were made to measure the staff time required to conduct each of 6 distinct events:
- Patient Check-In
- Patient presents at reception
- Patient departs for waiting area
- Scheduling
- Obtain patient calendar
- Provide patient his/her schedule
- Pharm Monitoring
- Medicaid
- Medicare
- Private Insurance
- Self Pay
- Laboratory
- Blood draw
- Laboratory entry of patient data
- Laboratory
- Dose given & documented
- Medical Records Review
- Check In
- Measurement Commenced
- Measurement Terminated
- Pharm Monitoring
- Dose given & documented
- Scheduling
- Obtain patient calendar
- Provide patient his/her schedule
- Check In
- Measurement Commenced
- Measurement Terminated

We sought to obtain 10 time measurements of each event at each center. Because some centers combined tasks, pharmacist monitoring could not be timed at 3 centers, and patient scheduling could not be timed at 4 centers.

**Results**

**Results (cont’d)**

On a per-cycle basis, the mean (SD) DARB dose was 331 mcg (144 mcg). The most common DARB dose was 200 mcg (80% of doses administered). During EPO cycles, the mean (SD) dose was 92,600 units (47,800 units). The most common EPO dose was 40,000 units (79% of doses administered).

Excluding visits during which chemotherapy was administered, DARB patients visited study centers 28% less frequently:

- Nearly half of DARB patients completed their chemotherapy cycle without a non-chemotherapy visit, versus only 39% of EPO patients.
- EPO patients were nearly twice as likely to require >1 non-chemotherapy visit.

**Conclusions**

Our time-motion assessment does not fully capture all staff time. For example, consultation between staff members was not recorded.

Due to differences in standard procedures between centers, minor protocol revisions were required to complete the study.

This study only documents some of the costs of additional clinic visits. For example, patient travel costs and time lost by patients (and in some cases, caregivers) were not considered.

Key Findings:

- Patient visits for erythropoiesis stimulating proteins account for considerable staff time. Consequently, additional visits for CBGs and growth factor doses are costly for oncology centers.
- Use of DARB in place of EPO is associated with 19%, 29% and 28% reductions in CBG, growth factor doses and non-chemotherapy visits, respectively.
- This multi-center study confirms previous findings,7 and indicates significant staff time may be saved by substituting DARB for EPO.

References


Author Disclosure

The authors have the following disclosure concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

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