

Treatment of Anemia in Lung Cancer

**Nicholas Thatcher
UK**



ANEMIA

Anemia in Cancer

- Hb is a prognostic in lung cancer
- Fatigue, loss of energy, weakness, dyspnea
- Reduced cognition leads to reduction in QOL
- Decreased ability for daily function
- Complicates treatment and causes delays in treatment, etc.
- Poor prognosis with RT and CT
- Under-recognized and under-treated

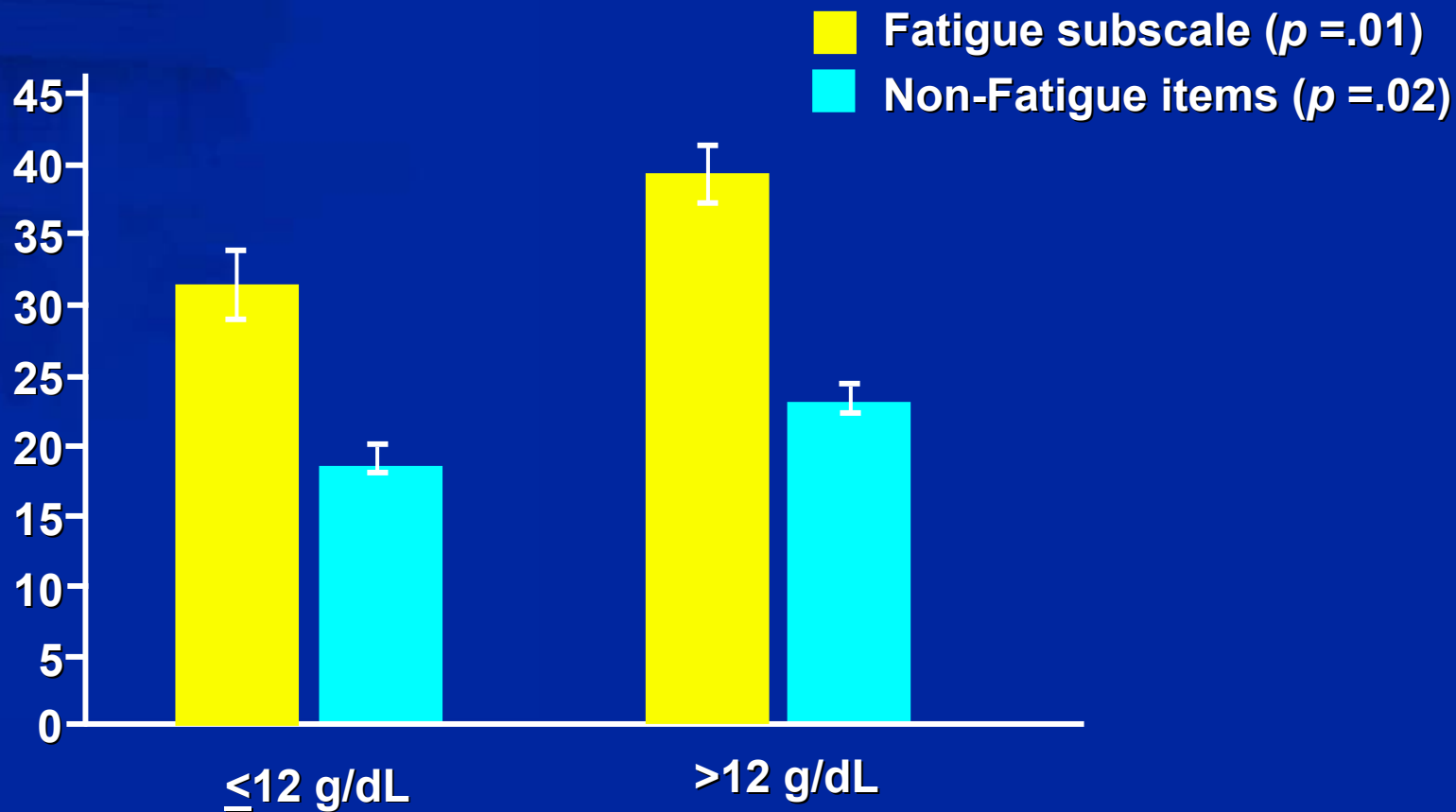
Signs and Symptoms at Diagnosis of Lung Cancer

Sign and symptom	Frequency (%)
Fatigue	84
Decreased activity	81
Cough	71
Dyspnea	59
Decreased appetite	57
Weight loss	54
Pain	48
Hemoptysis	25

Conclusion: Fatigue is under-recognized in patients with lung cancer but very important to patients

Relationship of Anemia to Fatigue

Mean Fatigue subscale* and non-Fatigue item* scores by Hb level



*Components of the Functional Assessment of Cancer Therapy- Anemia (FACT-An) instrument

Cella (1997)

Anemia and Epoetin

Randomized Trials in Solid Tumors

■ Prophylactic with or without CT

- *Abels Eur J Cancer 1993*
- *Del Mastro J Clin Oncol 1997*
- *ten Bokkel et al. Med Oncol 1998*
- *Glimelius et al. J Clin Oncol 1998*
- *Dunphy et al. Cancer 1999*
- *Thatcher et al. Br J Cancer 1999*

■ CT-induced anemia

- *Cascinu et al. J Clin Oncol 1994*
- *Henry and Abels Semin Oncol 1994*
- *Wurnig et al. Transfusion 1996*
- *Kurs et al. Gynaecol Oncol 1997*
- *Oberhoff et al. Ann Oncol 1998*
- *Littlewood et al. J Clin Oncol 2001*

+ Large Community Studies

Epoetin Without Chemotherapy

Studies >50 patients

Patients (% solid)	Randomized	PS better	QOL
118 (68%) ¹	Y	–	LASA ↑
180 (prostate) ²	Y for dose	–	EORTC ↑ if Hb \geq 2g
67 (40%) ³	N	Y	(↑)
183 (60%) ⁴	N	Y	LASA, FACT-An ↑

¹Abels (1993); ²Johansson (2001); ³Ludwig (1993); ⁴Quirt (2001)

Epoetin – Prophylaxis on Chemotherapy

Studies >50 patients

Patients	Randomized	CT	QOL
62 (breast) ¹	Y	CEF	No difference
84 (GI) ²	Y for dose	Nonplatinum	EORTC Fatigue ↑
130 (SCLC) ³	Y	Platinum	No difference

¹del Mastro (1997); ²Glimelius (1998); ³Thatcher (1998)

Epoetin Alfa and Darbepoetin Alfa Response – Patients on Chemotherapy

Randomized studies >200 patients

Patients	Percent Solid tumors	Response vs. control	QOL
278 ¹	68%	48% vs. 7%	LASA↑
359 ²	54%	66% vs. 21%	LASA↑, FACT-An↑
320 ³	Lung	66%* vs. 24%	FACT Fatigue ↑

*Response defined as Hb increase >1 g/dL

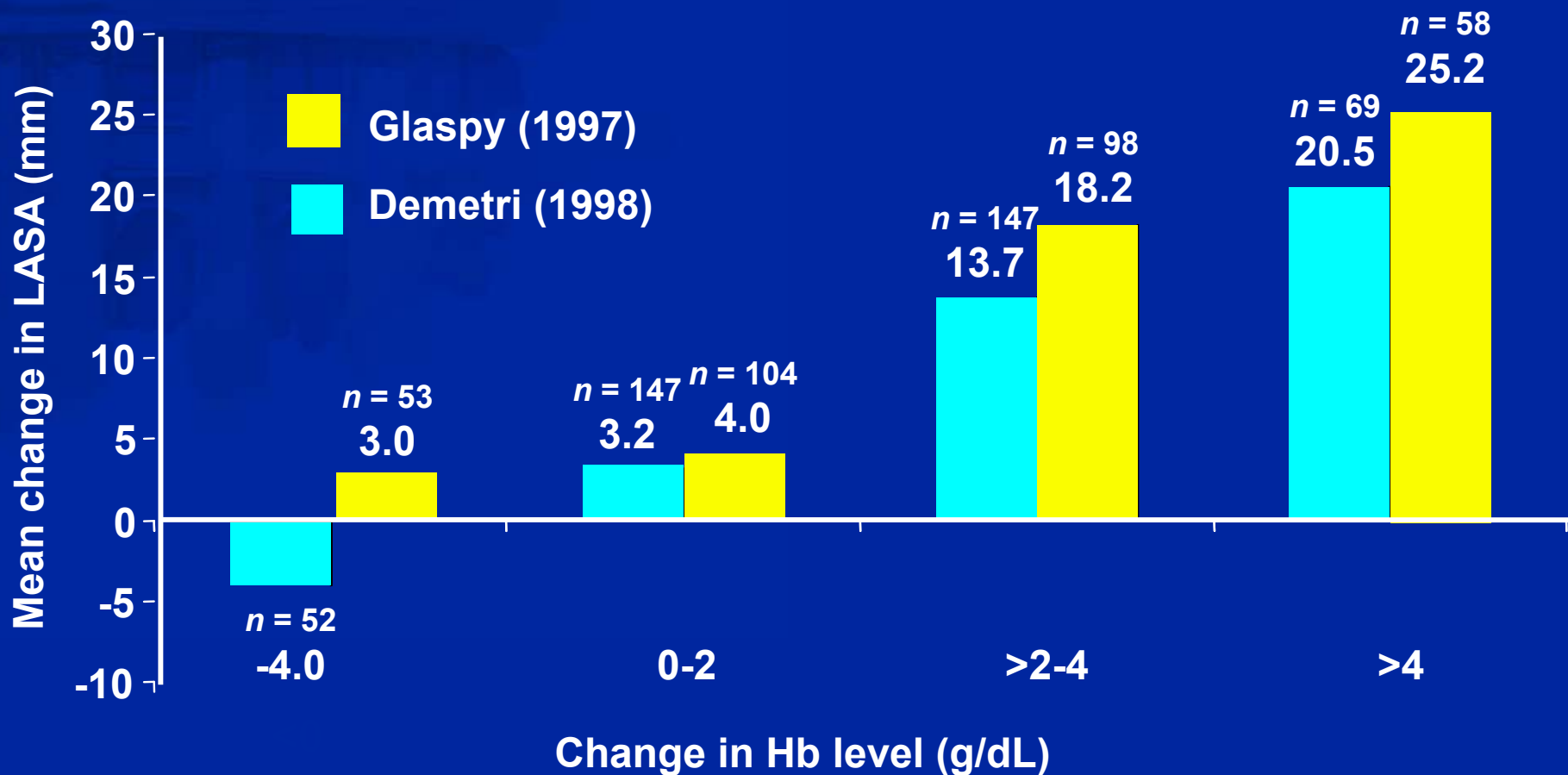
Epoetin Alfa Response – Patients on Chemotherapy

Nonrandomized studies >200 patients

Patients	Solid Tumors	Response	QOL
2,289 ¹	78%	60%	LASA ↑ , FACT-An ↑
2,030 ²	77%	53%	LASA ↑
2,964 ³	81%	49%	LASA ↑ , FACT-An ↑
218 ⁴	67%	63%	LASA ↑

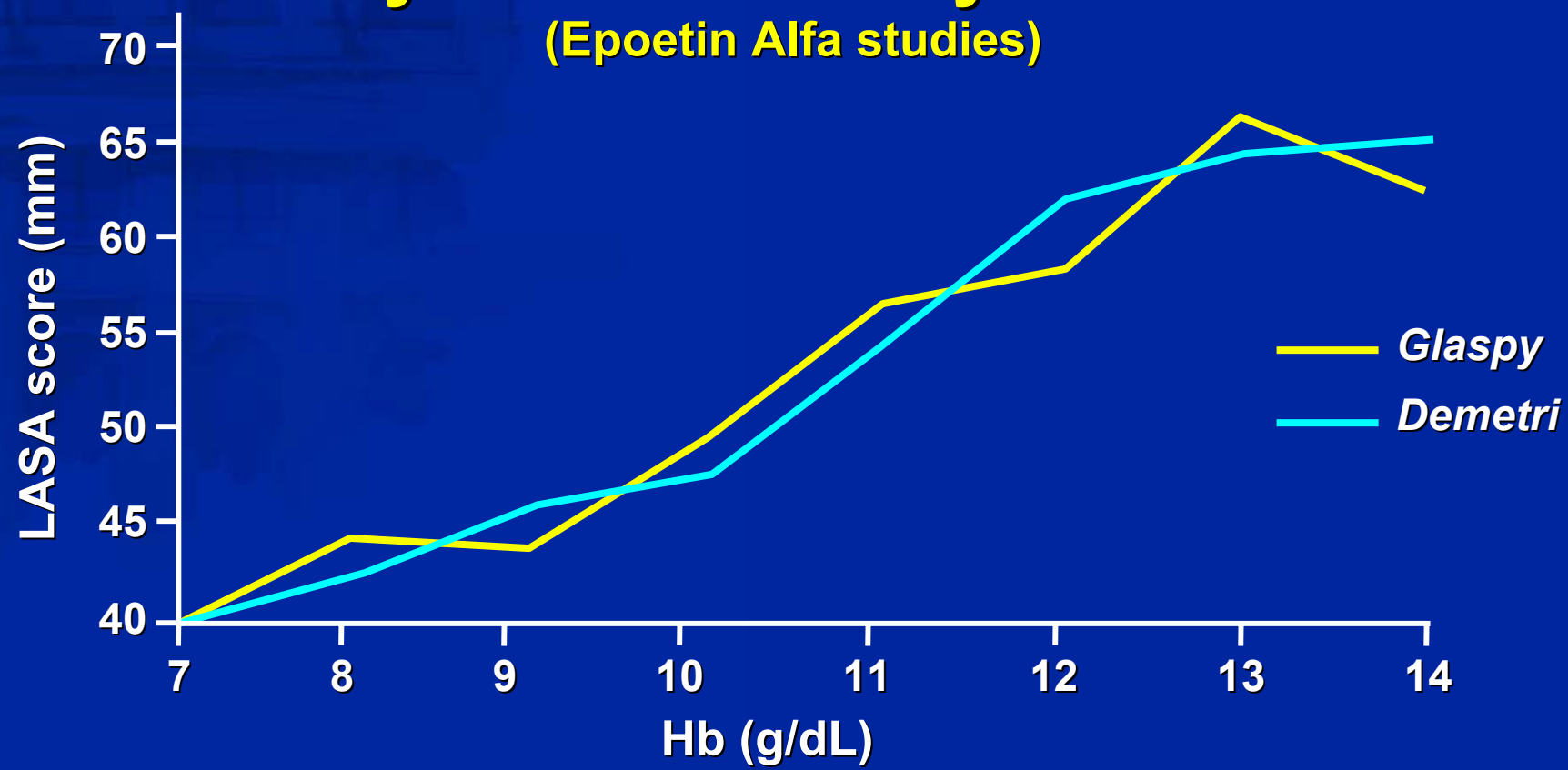
¹Demetri (1998); ²Glasy (1997); ³Gabrilove (2001); ⁴Quirt (2001)

Mean Change in Daily Activities by Change in Hb Level (Lung)



Cross-Sectional Analysis of Hb Level by Overall Quality of Life

(Epoetin Alfa studies)



<i>Glaspys</i>	181	551	818	680	472	345	221	114
<i>Demetri</i>	118	497	812	931	515	286	278	125

LASA = Linear Analog Scale Assessment (overall QOL scores)
Crawford (2002)

CECOG Consensus 2002

Anemia Lung Cancer Treatment Recommendations

- Patients with anemia secondary to lung cancer and/or its treatment should receive rHuEPO
 - To reduce risks of transfusion
 - To improve QOL
- Patients most likely to benefit
 - Hb <10 g/dL
 - Hb 10–12 g/dL with symptoms of fatigue and 2 or more months of chemotherapy anticipated
- 10,000 IU tiw and 40,000 IU qw are equivalent

Recommendations for Use of rHuEPO for the Management of Cancer-Associated Anemia

NCCN* (NCCN 2003)	CECOG† (CECOG 2003)
Criteria for initiation	
<ul style="list-style-type: none"> • Screen at Hb <11 g/dL to confirm cancer-related anemia‡ • Hb 10-11 g/dL = consider • Hb <10 g/dL = strongly consider 	<ul style="list-style-type: none"> • Evaluate to confirm cancer-related anemia • Hb <10 g/dL • Hb 10-12 g/dL with concomitant clinical symptoms of fatigue or decreased energy and QOL and \geq 2 months chemotherapy anticipated
Dose	
<ul style="list-style-type: none"> • 40,000 IU QW or 10,000 IU TIW; once optimal Hb level achieved, titrate dose to maintain Hb 12 g/dL 	<ul style="list-style-type: none"> • 40,000 IU QW or 10,000 IU TIW

*Non-tumor-specific guidelines; †Lung-cancer specific; ‡Rule out such things as bleeding, hemolysis, nutritional deficiency, hereditary

Conclusions

- rHuEPO effect on QOL independent of tumor response or tumor type
- Greatest QOL improvement if Hb 11→12 g/dL, less fatigue, higher QOL, better well being in NSCLC
- Similar results obtained in RCTs and very large community studies
- Weekly dosing equivalent to 3 times a week
- Possible survival benefit if Hb \geq 12 g/dL