PXXX

Insights to the Real-World use of Epoetin in Germany: A Multicentre, non-interventional study with epoetin theta (Eporatio®) in patients with chemotherapy-induced symptomatic anaemia

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BACKGROUND

- Chemotherapy-induced anaemia (CIA) in cancer patients correlates with poor performance status and decreased quality of life.
- Therapeutic options include erythropoiesis-stimulating agents, iron substitution and red blood cell (RBC) transfusions.
- Guidelines recommend for symptomatic anaemia the use of ESA at haemoglobin levels <10g/dl and red blood cell transfusions at Hb levels < 7 g/dl (1). Despite existing guidelines the use of ESA varies widely in daily clinical practice.

The aim of this observational study was to assess CIA management strategies and the administration of epoetin theta (dosage, titration, duration of treatment) and to evaluate adherence to epoetin theta summary of product characteristics (SPC) and current guidelines for CIA therapy in daily clinical practice.

METHOD

- Prospective, non-interventional study (NIS) on the use of epoetin theta for the treatment of symptomatic anaemia in adult cancer patients with non-myeloid malignancies receiving chemotherapy. The NIS was conducted in oncologic, gynecologic and hematologic private practices and outpatient units in Germany. Following the first dose of epoetin theta, data were collected for a period of 12 weeks irrespective of the treatment duration with epoetin theta.

RESULTS

Demography and baseline

- Data of 669 patients were provided by 45 German hospitals and spezialized oncological practices.
- Patient demographics and baseline disease characteristics are summarized in Table 1.
- The majority of patients (595 / 88.9%) had solid tumors, 74 (11.1%) hematologic malignancies.
- Most common were breast cancer (21.7%), lung cancer (14.1%) and NHL (9.9%).

Tab. 1: Patient demographics and baseline disease characteristics

	N=669
Age, years, median (q1; q3)	66 (58; 74)
> 65 years, n (%)	351 (52.5%)
Female, n (%)	370 (55.3%)
Cancer type, n (%)	
Breast cancer	145 (21.7%)
Lung cancer	94 (14.1%)
NHL	66 (9.9%)
Ovarian cancer	56 (8.4%)
Other	308 (46.0%)
Time since initial diagnosis, months, median (q1; q3)	5.6 (3; 28.5)
Metastases, n (%)*	341 (57.3%)
Current chemotherapy, n (%)	
curative	184 (27.5%)
palliative	484 (72.3%)

* Percentage based on 595 pts with solid tumors

CIA management strategies

- In addition to epoetin theta, 244 pts (36.5%) received RBC transfusions, 80 pts (12.0%) intravenous (iv) iron (Fe) substitution and 15 pts (2.2%) oral Fe substitution, resulting in the CIA-management strategies summarized in Table 2.

Tab. 2: CIA management strategies

	Patients	(%)
Epoetin theta only	364	54.4
Epoetin theta + RBC transfusion	210	31.4
Epoetin theta + Fe iv	54	8.1
Epoetin theta + Fe oral	7	1.0
Epoetin theta + RBC transfusion + Fe iv	26	3.9
Epoetin theta + RBC transfusion + Fe oral	8	1.2

Dose and exposure to epoetin theta

Tab. 3: Epoetin theta dose

Follow up time* since epoetin theta initiation, weeks, median (q1; q3)	9 (5; 12)
Cumulative epoetin theta dose during observational period [IU], median (q1; q3)	150,000 (80,000;220,000)
Pts with at least one epoetin theta dose increase during observational period, n (%)	90 (13.5)
Time until first epoetin theta dose increase, weeks, median (q1; q3)	5 (4; 7)
Epoetin theta starting dose, n (%)	
4,000 IU	7 (1.0%)
10,000 IU	16 (2.4%)
20,000 IU	553 (82.7%)
30,000 IU	87 (13.0%)
34,000 IU	1 (0.1%)
40,000 IU	5 (0.7%)
Epoetin theta last dose during observational period, n (%)	
4,000 IU	18 (2.7%)
10,000 IU	13 (1.9%)
20,000 IU	490 (73.2%)
30,000 IU	111 (16.6%)
34,000 IU	1 (0.1%)
40,000 IU	30 (4.5%)
60,000 IU	6 (0.9%)

* time between epoetin theta initiation and last epoetin theta application during observational period of max. 12 weeks

RESULTS

- Starting dose was 20.000 IU in 82.7% of all pts (10.000 IU: 2.4% / 30.000 IU: 13.0% / 40.000 IU: 0.7%).
- Physicians increased the epoetin theta dose for only 90 pts (13.5%) during the observational period.
- Median (q1; q3) duration of epoetin theta treatment was 9 (5; 12) weeks.

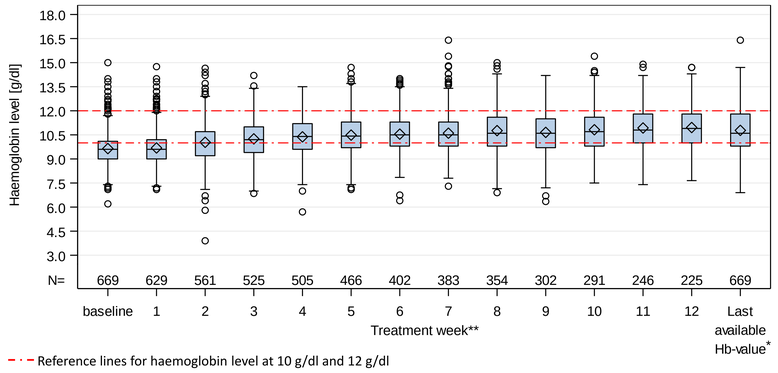
Tab. 4: Epoetin theta administration outside the SPC/guideline recommendations

	Patients [N=669]
Patients with baseline Hb ≥ 10 g/dl	216 (32.3%)
Patients with at least one i.v. epoetin theta administration	21 (3.1%)
Epoetin theta starting dose	
< 20.000 IU	23 (3.4%)
> 20.000 IU	93 (13.9%)
Patients with at least 1 week with >1 epoetin theta administrations	27 (4.0%)
Patients with at least 1 week without epoetin theta administration even though Hb level is ≤ 12 g/dl	202 (30.2%)
Patients without epoetin theta dose increase even though Hb values are below 11 g/dl and Hb increase compared to baseline is <1 g/dl [N=624]*	128 (20.5%)
As above: Alternative Hb level 10 g/dl [N=624]*	54 (8.7%)
Patients with at least 1 week with epoetin theta dose >60.000 I.U.	0 (0.0%)

Hb-level

- Median (q1; q3) Hb-level at baseline (week 1) was 9.6 (9.0; 10.1) g/dl.
- Median (q1; q3) Hb-level 2 weeks after initiation was 10.0 (9.2; 10.7) g/dl
- Median (q1; q3) Hb-level for last available value during observational period was 10.6 (9.8; 11.8) g/dl
- Median (q1; q3) Hb-level increase between baseline and last value was 1.0 (0.1; 2.1) g/dl

Fig. 1: Haemoglobin level [g/dl] per time-point



* last available haemoglobin value during observational period of maximally 12 weeks per patient.
** haemoglobin level at treatment week x` refers to the average haemoglobin level [g/dl] for respective week, per patient.
Note: A box plot indicates the mean (diamond inside the box), median (the band inside the box), first (bottom of the box) and third (top of the box) quartiles, minimum value defined as Q1-1.5*IQR (lower whisker) and maximum value defined as Q3+1.5*IQR (upper whisker). Any data not included between the whiskers are plotted as an outlier (small circle).

RBC transfusions

- For 244 pts (36.5%) a total of 409 RBC transfusions were reported.
- Overall, in 55% of transfusions the Hb-value was ≥ 8.5 g/dl (73.5% ≥ 8.0 g/dl; 95.7% ≥ 7.0 g/dl).

Tab. 5: RBC Transfusions and respective Hb-values

RBC transfusion during epoetin theta therapy, number (%) of pts	244 (36.5%)
RBC transfusion during epoetin theta therapy, number of transfusions	409
RBC transfusion during week 1, number (% of all pts / % of pts with transfusion)	98 (14.6%/40.2%)
Last Hb value before transfusion, median (q1; q3)	8.5 (7.9; 9.3)
≥ 7.0 g/dl, n (%)*	95.7%
≥ 8.0 g/dl, n (%)*	73.5%
≥ 8.5 g/dl, n (%)*	55.0%

* based on 373 RBC transfusions with available Hb value within max. 4 days prior to transfusion event

Iron substitution

- An iron substitution during the observation phase was given to 95 patients (14.2%) (i.v. 80 / p.o. 15)
- Iron status (transferrin saturation (TSAT) and serum ferritin (SF)) were determined for only 226 pts (33.8%) during the observational period.
- Only 40 out of 115 patients with iron deficiency (34.8%) received iron substitution at least once during the observational period (11 out of 26 (42.3%) with absolute iron deficiency).

CONCLUSIONS

- The results of this non-interventional study will help to get a better understanding on how epoetin theta is being used in German clinical practice.
- Anti-anemic therapy with epoetin theta and a starting dose of 20,000 I.U seems to be very effective in routine clinical practice: a profound increase in Hb values was observed in most patients and a reduced need for blood transfusions was noted over time.
- Real-life epoetin theta dose adjustment policy is often not in line with the recommendations.
- The high rate of RBC transfusions 'out of guideline' (Hb-value < 7.0 g/dl) and low rate of iron substitution does not comply with current guidelines (2,3).

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