Acute hematotoxicity of the *BEACOPP* chemotherapy regimen: Experience from the HD9 study of the German Hodgkin's Lymphoma Study Group (GHSG)

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BEACOPP regimen

BEACOPP baseline: Standard dose without G-CSF support
BEACOPP escalated: Dose-intensified plus G-CSF support

drug	route	day	dose [mg/m²/day] escalated level 4	level 3	level 2	level 1	baseline level 0
Cyclophosphamide	i.v.	1	1250	1100	950	800	650
Adriamycine	i.v.	1	35				25
Etoposide	i.v.	1-3	200	175	150	125	100
Procarbazine	p.o.	1-7	100				100
Vincristine	i.v.	8	1.4				1.4
Bleomycine	i.v.	8	10				10
Prednisone	p.o.	1-14	40				40
G-CSF	s.c.	8-14	300[B] / 480[C] µg				none[D]

number of cycles: 8
intended cycle duration: 21 days

[A] median
[B] for < 75 kg body weight
[C] for ≥ 75 kg body weight
[D] G-CSF was given in 11 % of cycles

BEACOPP escalated starts at dose level 4.
Dose is reduced to next lower level in each case of:

- leukopenia WHO grade IV > 4 days
- all other WHO grade IV toxicities
- delay of therapy by 2 weeks due to insufficient hematopoietic recovery

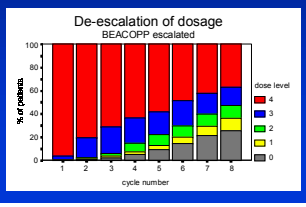
Dose is reduced to level 0 (baseline) in case of the above events in 2 consecutive cycles.

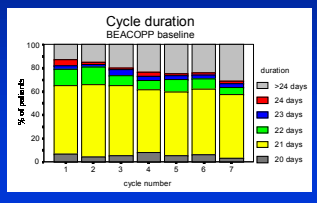
Characteristics of doses and cycle duration:

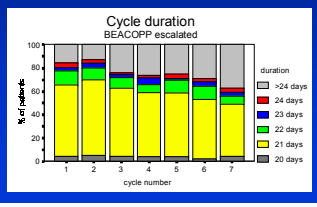
Mean cycle duration was not different between BEACOPP baseline and escalated

The initial dose level can be maintained in ~ 40% of patients during BEACOPP escalated

Dose-limiting delay occurred in 3% of cycles







Leukocytes

Increased frequency of WHO grade IV toxicity in BEACOPP escalated vs. baseline

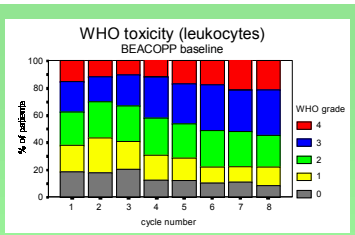
but

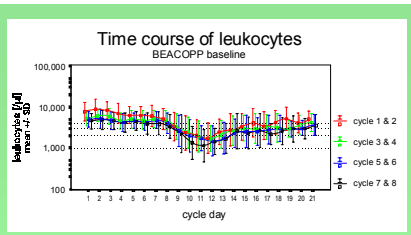
No significant difference in severity of infections between BEACOPP baseline and escalated

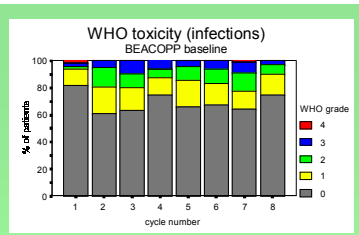
No increase of toxicity over consecutive cycles

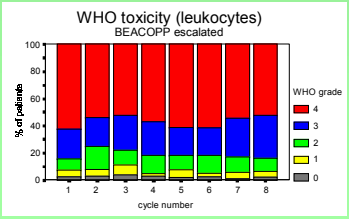
Median duration of G-CSF treatment was 7 days in BEACOPP escalated

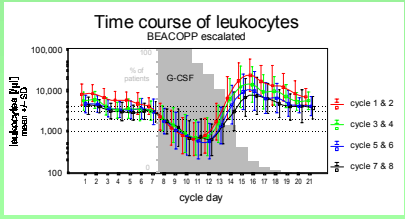
Dose-limiting toxicity occurred in 14% of cycles

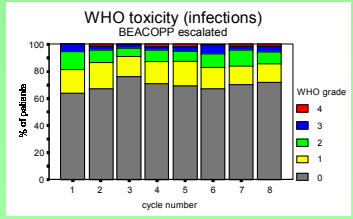












Platelets

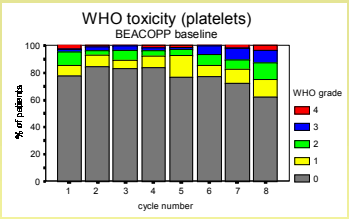
BEACOPP escalated:

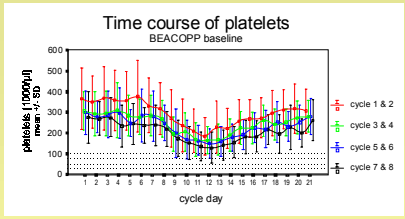
Thrombocyte counts did not fully recover to inital values within 21 days

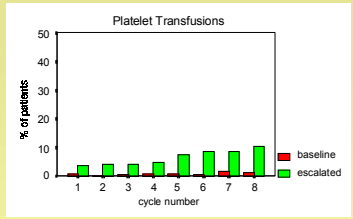
Increase of WHO toxicity over consecutive cycles

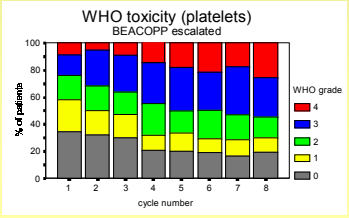
27% of patients received platelet transfusions

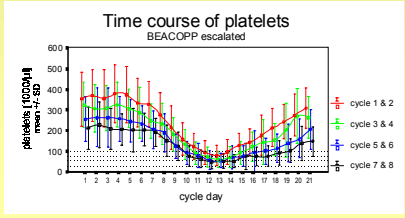
Dose-limiting toxicity occurred in 13% of cycles











Patients having platelet transfusion(s) during chemotherapy

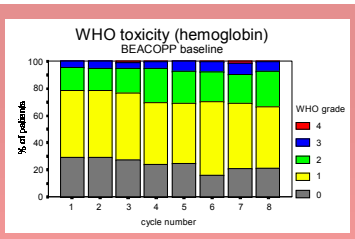
	female	male	sum
baseline	3%	3%	3%
escalated	31%	24%	27%

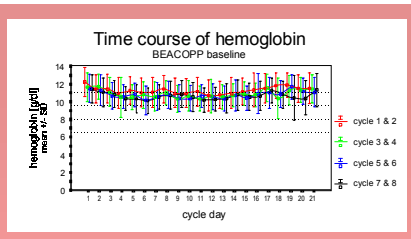
Hemoglobin

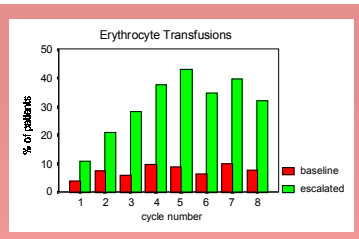
BEACOPP escalated:

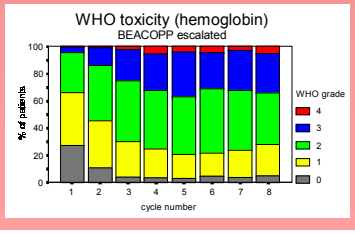
68% of patients received erythrocyte transfusions during BEACOPP escalated

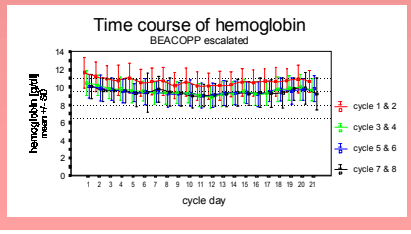
Median number of transfused units in transfused patients was:
BEACOPP baseline: 4
BEACOPP escalated: 6











Patients having erythrocyte transfusion(s) during chemotherapy

	female	male	sum
baseline	36%	16%	23%
escalated	77%	63%	68%

Summary

Hematotoxicity of all lineages was increased during BEACOPP escalated compared with BEACOPP baseline.

No difference in rate of infections was observed between BEACOPP baseline and BEACOPP escalated.

Increased toxicity to thrombopoiesis and erythropoiesis during BEACOPP escalated required an increased need for blood cell support (platelet and erythrocyte transfusions).

Data

Number of patients in this analysis (documented until Jan '98):

BEACOPP baseline: 289 patients
BEACOPP escalated: 220 patients