

Case #5: Nonseminomatous Germ Cell Tumor of the Testis: A Multidisciplinary Approach

Kurt Miller, MD
Department of Urology
Charité
Berlin, Germany

Non-Seminoma Clinical Stage I (CSI)

- Embryonal carcinoma (60%), yolk sac tumor, choriocarcinoma, and teratoma
- Focal vascular invasion
- Abdominopelvic CT normal
- Chest CT??
- Tumor markers after orchiectomy ↘ undetectable levels

Non-Seminoma CSI— Prognostic Factors

- Embryonal carcinoma (60%), yolk sac tumor, choriocarcinoma, and teratoma
- Focal vascular invasion

Non-Seminoma CSI— Prognostic Factors

Infiltration of venous blood vessels or lymphatic infiltration by the primary tumor are the most important prognostic indicators for occult metastases

Non-Seminoma CSI— Prognostic Factors

- Risk for occult metastases with VI: 48%*
- Risk without VI: 14% to 22%*

Non-Seminoma CSI— Relapse Sites

- **Retroperitoneum** **54% to 78%**
- **Lung** **13% to 31%**

Non-Seminoma CSI— Options

- **Active surveillance**
- **Adjuvant chemotherapy**
- **Retroperitoneal lymph node dissection (RPLND)**

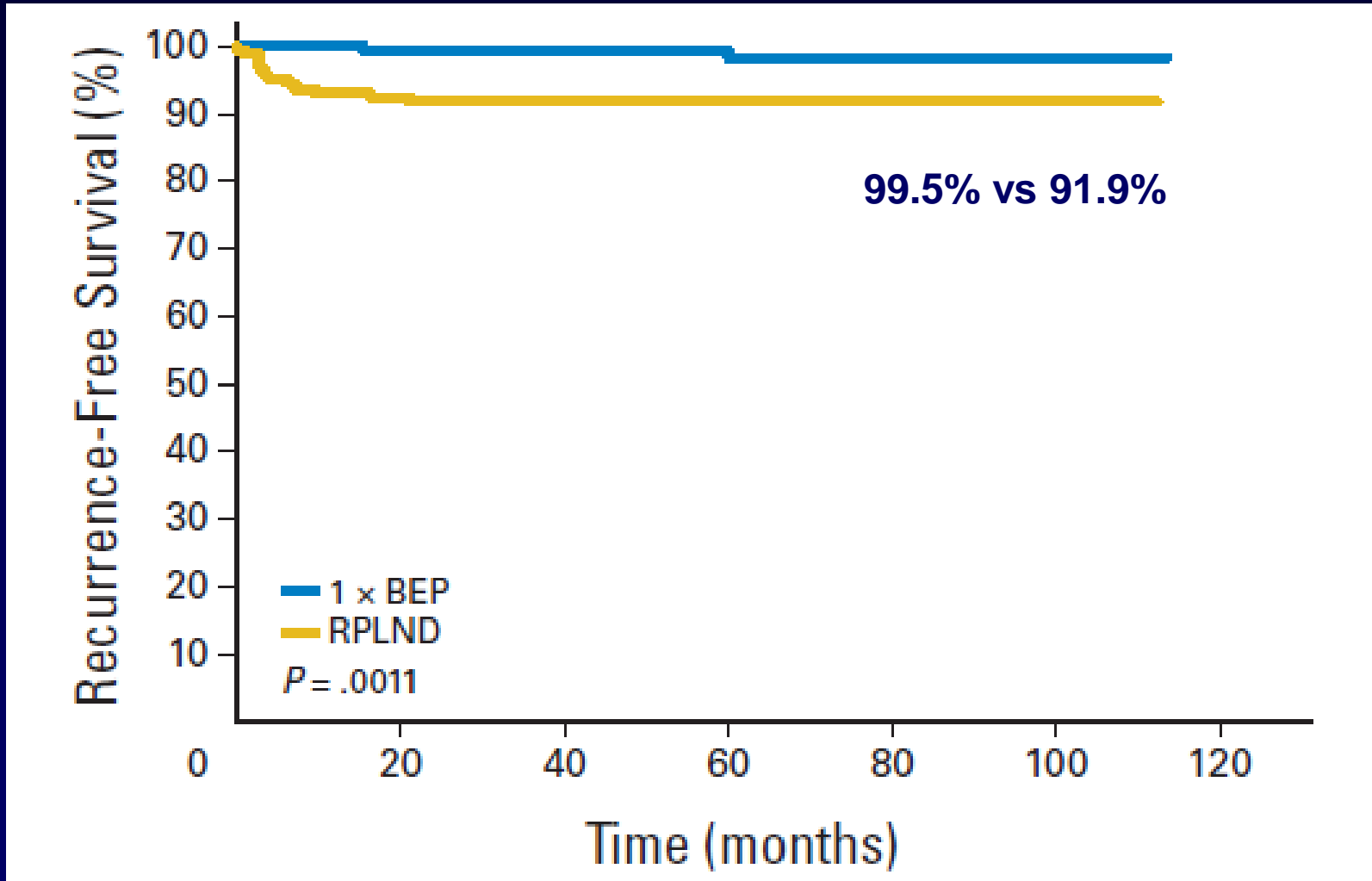
Randomized Phase III Trial Comparing Retroperitoneal Lymph Node Dissection With One Course of Bleomycin and Etoposide Plus Cisplatin Chemotherapy in the Adjuvant Treatment of Clinical Stage I Nonseminomatous Testicular Germ Cell Tumors: AUO Trial AH 01/94 by the German Testicular Cancer Study Group

Peter Albers, Roswitha Siener, Susanne Krege, Hans-Uwe Schmelz, Klaus-Peter Dieckmann, Axel Heidenreich, Peter Kwasny, Maik Pechoel, Jan Lehmann, Sabine Kliesch, Kai-Uwe Köhrmann, Rolf Fimmers, Lothar Weißbach, Volker Loy, Christian Wittekind, and Michael Hartmann

From the Department of Urology, Klinikum Kassel GmbH, Kassel; Department of Urology, Bonn University; Institute of

- **Prospective randomized study**
- **382 patients**
- **Median follow-up of 4.7 years**

2-Year Recurrence-Free Survival



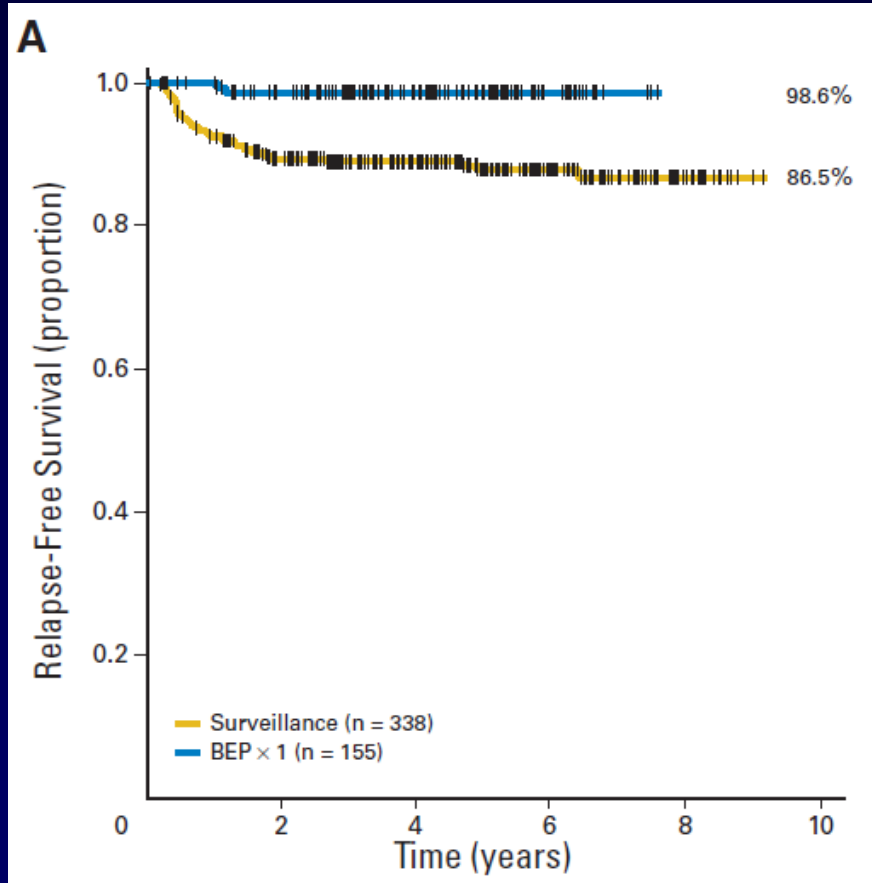
Risk-Adapted Treatment in Clinical Stage I
Nonseminomatous Germ Cell Testicular Cancer:
The SWENOTECA Management Program

Torgim Tandstad, Olav Dahl, Gabriella Cohn-Cedermark, Eva Cavallin-Stahl, Ulrika Stierner, Arne Solberg, Carl Langberg, Roy M. Bremnes, Anna Laurell, Hans Wijkstrøm, and Olbjørn Klepp

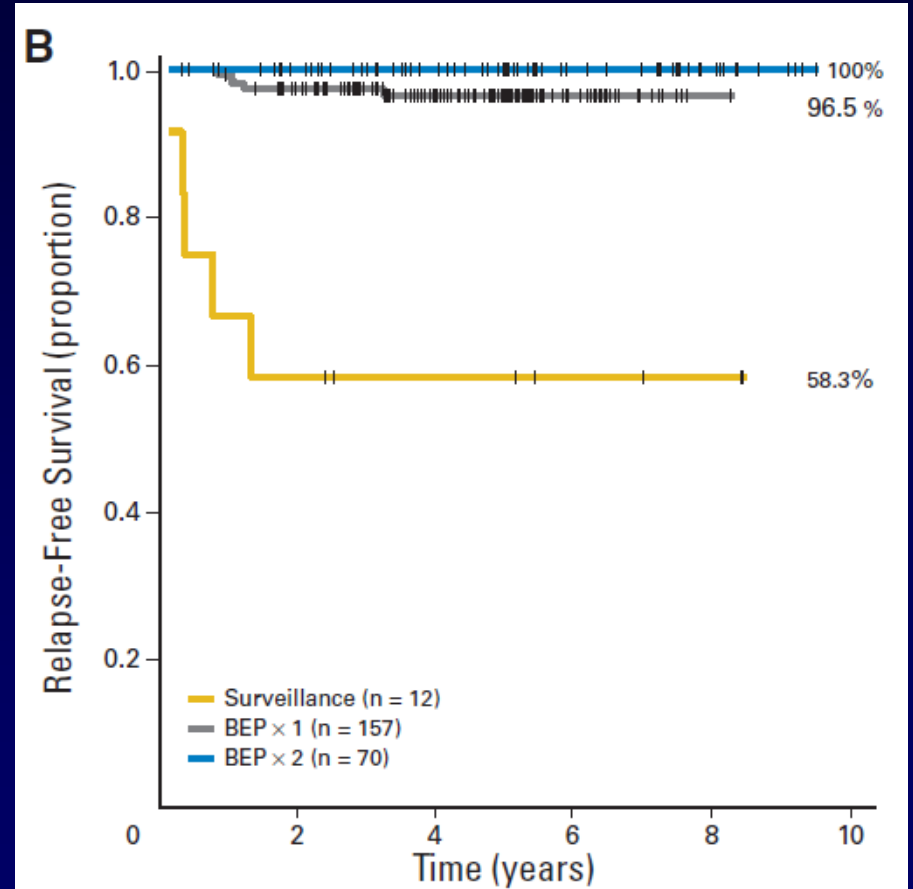
- **Prospective management study**
- **745 patients**
- **Median follow-up of 4.7 years**

Relapse-Free Survival

Without Vascular Invasion



With Vascular Invasion



Burden of Chemotherapy

	Extrapolated Data		
	Surveillance for All	Surveillance (VASC-) BEP x 1 (VASC+)	BEP x 1 for All
	100	100	100
Relapses	≈ 21	≈ 9	≈ 2
Salvage CX	≈ 77	≈ 32	≈ 7
Total CX	≈ 77	≈ 64	≈ 107

Long-Term Side Effects of Chemotherapy

	Chemotherapy		Stage I		Controls	
	Median	Range	Median	Range	Median	Range
Thyroid-stimulating hormone, mU/L	1.7	0.5-5.1	1.4	0.3-3.8	1.7	0.7-10.0
Follicle-stimulating hormone, U/L	17.6	2.4-64.9	9.6	2.7-30.5	4.0	0.3-15.2
Luteinizing hormone, U/L	6.4	1.8-20.2	5.2	2.0-17.4	3.8	1.9-8.1
Total testosterone, nmol/L	18.0	5.0-37.0	20.0	11.0-49.0	23.0	13.0-56.0
Sex hormone-binding globulin, nmol/L	23	10-51	24	10-73	23	10-55
Free testosterone, nmol/L	0.451	0.11-0.916	0.482	0.280-0.874	0.579	0.292-1.466
Inhibin B, ng/L	63	10-207	125	10-271	212	96-418

Long-Term Side Effects of Chemotherapy

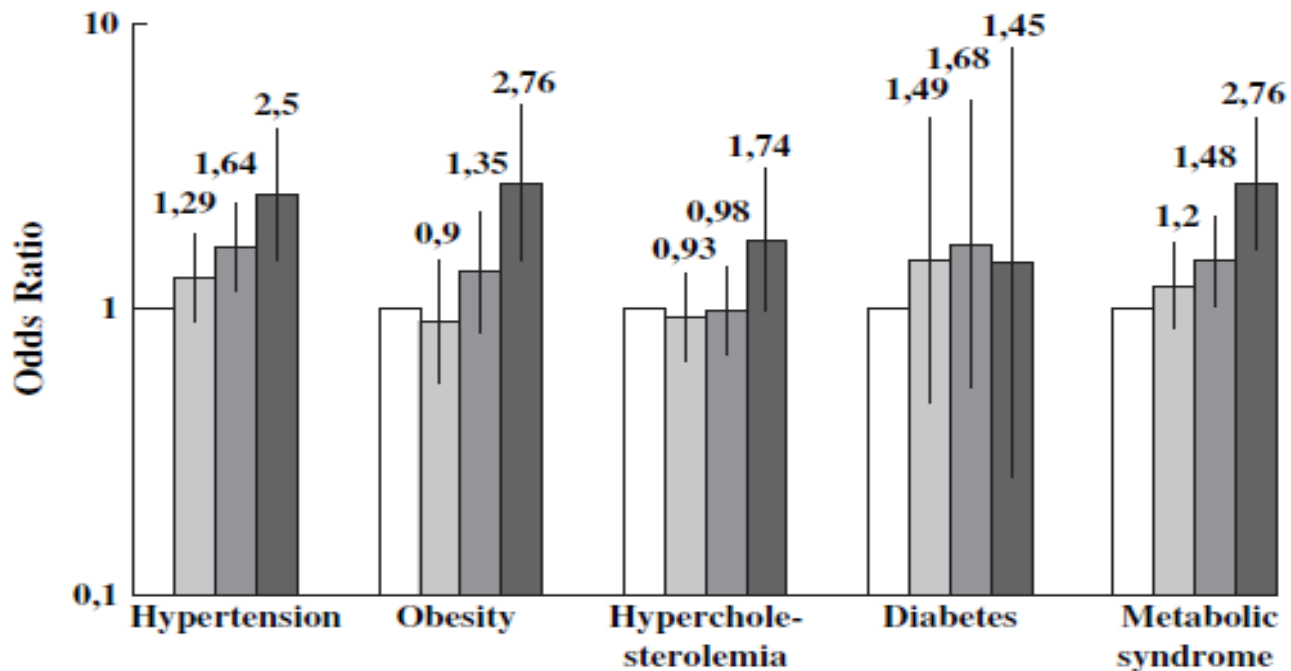


Figure 2. Age-adjusted odds ratios (OR) for the different components of the metabolic syndrome and for the syndrome itself (≥ 2 components present) in different treatment groups, using surgery group as reference. Bars indicate 95% confidence interval for OR. \square Surgery, \square Radiotherapy, \square Cisplatin ≤ 850 mg, \blacksquare Cisplatin > 850 mg.

Non-Seminoma Patient

- **Patient was treated with 3 cycles of BEP chemotherapy. Tumor markers normalized after the last round of chemotherapy. Abdominal CT scan showed complete remission of paraaortic mass.**

Non-Seminoma Post Chemo RPLND

- **Patients who achieve complete remission, that is, normalized tumor markers and no visible residual lesions after chemotherapy, postchemotherapy surgery is not required**

available at www.sciencedirect.com
journal homepage: www.europeanurology.com



European Association of Urology



Review – Testis Cancer

Postchemotherapy Retroperitoneal Lymph Node Dissection in Advanced Germ Cell Tumours of the Testis

Axel Heidenreich^{a,*}, David Thüer^a, Sergej Polyakov^b

^a Division of Oncological Urology, Department of Urology, University of Cologne, Cologne, Germany

^b Department of Urology, State Institution N. N. Alexandrov Research Institute of Oncology and Medical Radiology, Minsk, Belarus

In patients with any residual mass irrespective of size and normalization of tumor markers, the residual masses should be resected

Post Chemo RPLND Histology

- **Necrosis** 50%
- **Teratoma** 35%
- **Vital cancer** 15%

Post Chemo RPLND Residual Mass <1 cm Histology

- Teratoma 20%
- Vital cancer 8%

What Would We Recommend?

- **For VI+ non-seminoma: 1 cycle of BEP**
- **For progression following active surveillance
3 cycles of BEP**
- **In case of CR → no RPLND**