

Survival in mantle cell lymphoma after frontline treatment with R-bendamustine, R-CHOP and the Nordic MCL2 regimen – a real world study on patients diagnosed in Sweden 2007-2017

Alexandra Albertsson-Lindblad,¹ Thorgerdur Palsdottir,^{2,3} Karin E. Smedby,^{2,4} Caroline E. Weibull,² Ingrid Glimelius,^{2,5} and Mats Jerkeman¹

¹Division of Oncology, Skane University Hospital, Lund University, Lund; ²Department of Medicine Solna, Clinical Epidemiology Division, Karolinska Institutet and Karolinska University Hospital, Stockholm; ³Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm; ⁴Department of Medicine Solna, Division of Hematology, Karolinska University Hospital, Stockholm and ⁵Department of Immunology, Genetics and Pathology, Clinical and Experimental Oncology, Uppsala University and Uppsala Akademiska Hospital, Sweden

Correspondence:

ALEXANDRA ALBERTSSON LINDBLAD- Alexandra.albertsson_lindblad@med.lu.se

doi:10.3324/haematol.2021.279037

SUPPLEMENTARY MATERIAL

SUPPLEMENTARY TABLE 1 Description of frontline management strategies including treatment regimens, maintenance therapy, consolidative radiotherapy and no treatment

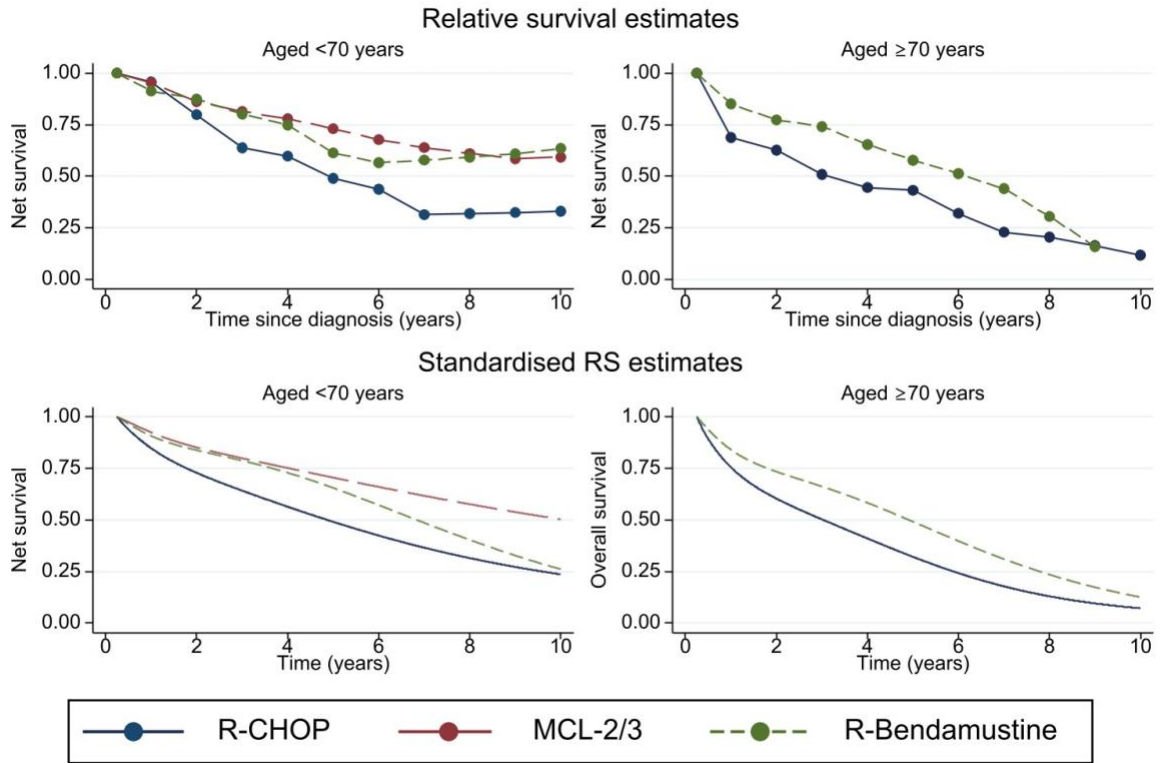
Primary treatment	All patients N (col %)	MCL2 N (%)	BR N (%)	R-CHOP N (%)	Other* N (%)
All patients	1,277				
Systemic Treatment	818				
<i>Chemotherapy</i>	80 (100)	268 (33)	231 (29)	93 (12)	216 (27)
Rituximab with chemotherapy	698 (86)	256 (95)	219 (95)	83 (89)	140 (65)
Autologous stem cell transplantation	219 (27)	218 (85)***	1 (0)	-	-
<i>Single rituximab</i>	12	-	-	-	-
Maintenance treatment	76 (6)				
-Rituximab	55 (4)	14 (25)	18 (33)	9 (16)	13 (24)
-Other**	21 (2)	3 (14)	11 (52)	1 (5)	6 (29)
Consolidative radiotherapy	18 (2)	4 (6)	2 (3)	4 (6)	8 (12)
Single radiotherapy	51 (4)	-	-	-	-
No treatment	144 (11)	-	-	-	-
Active treatment unspecified	105 (8)	-	-	-	-
Missing treatment data	159 (12)	-	-	-	-

* *Other include BAC (bendamustine, cytarabine), chlorambucil, CHOP/cytarabine, cyclophosphamide, cytarabine, CVP (cyclophosphamide, vincristine, prednisone), CVIP (cyclophosphamide, etoposide, FC, prednisone), (fludarabine, cytarabine), (ibrutinib, bendamustine), idarubicine, ixoten, (lenalidomide, bendamustine).*

** *Other maintenance treatment includes chlorambucil, lenalidomide, lenalidomide + rituximab, etoposide, ibrutinib, bortezomib.*

*** *Proportion of all patients treated with MCL2.*

SUPPLEMENTARY FIGURE 1 Unadjusted (top panel) and marginal (bottom panel) net survival, estimated with relative survival, among MCL patients diagnosed in Sweden between 2007 and 2017, by frontline treatment (BR, R-CHOP or MCL-2) and age at diagnosis (<70 and ≥70 years). Standardization was performed over year of diagnosis, sex, year of diagnosis, and performance status (separately for age groups). In patients ≥70 years, very few were treated with the MCL2 protocol and therefore, their survival is not presented separately.



SUPPLEMENTARY TABLE 2a-d Point estimates of overall survival (OS) from Kaplan-Meier estimation, standardized overall survival stratified by age and from standardized models of relative survival (RS) stratified by age. Estimates are presented with 95% confidence interval (95%CI) in relation to frontline treatment with R-CHOP, MCL2, BR and other systemic regimen. Standardization was performed over year of diagnosis, sex, age at diagnosis, and performance status (separately for age groups).

K-M OS estimates (95% CI)				
All patients	1 year	3 year	5 year	8 year
R-CHOP	0.79 (0.69-0.86)	0.53 (0.42-0.62)	0.40 (0.29-0.50)	0.17 (0.08-0.27)
MCL2	0.95 (0.93-0.97)	0.80 (0.74-0.84)	0.70 (0.65-0.76)	0.58 (0.51-0.65)
BR	0.87 (0.82-0.91)	0.70 (0.63-0.76)	0.50 (0.41-0.57)	0.29 (0.18-0.40)
Other *	0.78 (0.71-0.83)	0.55 (0.47-0.62)	0.38 (0.31-0.45)	0.19 (0.14-0.27)
<70 years				
MCL2	0.96 (0.93-0.98)	0.80 (0.75-0.85)	0.71 (0.65-0.77)	0.58 (0.10-0.49)
BR	0.93 (0.79-0.98)	0.79 (0.62-0.89)	0.59 (0.40-0.74)	0.54 (0.34-0.70)
R-CHOP	0.96 (0.74-0.99)	0.62 (0.39- 0.78)	0.46 (0.24-0.65)	0.27 (0.10-0.49)
≥70 years				
BR	0.86 (0.79-0.90)	0.68 (0.60-0.74)	0.47 (0.38-0.56)	0.21 (0.10-0.35)
R-CHOP	0.73 (0.60-0.82)	0.49 (0.36-0.61)	0.38 (0.26-0.49)	0.13 (0.05-0.25)
Standardized OS estimates (95% CI)				
<70 years	1 year	3 year	5 year	8 year
MCL2	0.92 (0.90-0.94)	0.78 (0.74-0.82)	0.67 (0.62-0.71)	0.52 (0.46-0.58)
BR	0.90 (0.85-0.95)	0.75 (0.67-0.84)	0.59 (0.49-0.71)	0.35 (0.24-0.51)
R-CHOP	0.85 (0.76-0.94)	0.62 (0.51- 0.76)	0.45 (0.34-0.61)	0.27 (0.16-0.43)
≥70 years				
BR	0.79 (0.70-0.90)	0.55 (0.45-0.67)	0.35 (0.26-0.45)	0.14 (0.08-0.24)
R-CHOP	0.71 (0.49-0.99)	0.40 (0.22-0.71)	0.20 (0.10-0.41)	0.06 (0.02-0.16)
Standardized RS estimates (95% CI)				
<70 years	1 year	3 year	5 year	8 year
MCL2	0.92 (0.90-0.95)	0.80 (0.76-0.84)	0.71 (0.66-0.75)	0.58 (0.52-0.64)
BR	0.91 (0.85-0.96)	0.79 (0.70-0.88)	0.66 (0.55-0.79)	0.40 (0.27-0.61)
R-CHOP	0.85 (0.75-0.96)	0.64 (0.52- 0.79)	0.49 (0.36-0.67)	0.32 (0.19-0.53)
≥70 years				
BR	0.84 (0.75-0.94)	0.66 (0.56-0.79)	0.49 (0.38-0.63)	0.23 (0.14-0.41)
R-CHOP	0.76 (0.56-1.03)	0.50 (0.32-0.79)	0.32 (0.18-0.57)	0.13 (0.05-0.32)

* Other include BAC (bendamustine, cytarabine), chlorambucil, CHOP/cytarabine, cyclophosphamide, cytarabine, CVP (cyclophosphamide, vincristine, prednisone), CVIP (cyclophosphamide, etoposide, FC, prednisone), (fludarabine, cytarabine), (ibrutinib,bendamustine), idarubicine, ixoten, (lenalidomide,bendamustine).