Epidemiology of Merkel Cell Carcinoma in Tuscany (Italy), 2006 to 2021

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Background

Merkel cell carcinoma (MCC) represents a rare but aggressive tumor still hampered by an unfavorable prognosis[1]. MCC incidence has increased in recent years worldwide[2].

Methods

The aim of our study is to perform an epidemiological retrospective study and evaluate the impact of MCC clinic-pathological features on overall survival (OS) in a specific geographical area. We retrospectively collected all reports dated 2006-2021 from the pathology archives of the University Hospital of Pisa and from the Hospital of Livorno. Within this Italian area has been already reported a higher incidence of melanoma[3]. We collected 94 cases.

Results

Region		Total % (tot)	Males% (tot)	Females% (tot)	Left % (n)	Right % (n)
	Head/neck	11,0 (12)	17,2 (9)	4,8 (3)	33 (3)	67 (6)
	Face	25,2 (27)	15,6 (9)	34,9 (18)	67 (12)	33 (6)
	Trunk	8,7 (10)	9,4 (6)	7,9 (4)	100 (4)	0 (0)
	Upper Limb	15,7 (19)	12,5 (7)	19,0 (12)	47 (9)	53 (10)
	Lower Limb	29,9 (32)	32,8 (19)	27,0 (13)	56 (18)	44 (14)
	Buttock	9,4 (11)	12,5 (7)	6,3 (4)	45 (5)	55 (6)
	Genitalia	0,0 (0)	0,0 (0)	0,0 (0)	0,0 (0)	0,0 (0)
Ulceration		Frequency % (n)				
	Absent	71,9 % (82)				
	Present	28,1 % (32)				
Infiltration		Frequency % (n)				
	Absent	41,5 % (37)				
	Present	58,4 % (52)				
Dimensions						
	Mean (cm)	3,0				
	Median (cm)	2				
	Mode (cm)	1				
	Standard deviation	2,8				
	Minimum (cm)	0,3				
	Maximum (cm)	18				
TNM		1	2	3	4	
	T % (n)	47% (41)	38% (33)	7% (6)	8% (7)	
	Stage % (n)	26% (12)	19% (9)	47% (22)	9% (4)	

Table 1. Summary of the clinico-pathological features of the MCC cases.

The most frequently affected site was the face (Table 1). Laterality was different according to the site and almost half of the lesions were T1 and almost half of the patients had a clinical stage III considering 19 cases of MCC diagnosis were a lymph node localization with unknown primary site. We registered a dramatic increase of MCC diagnoses in the last 5 years in comparison with previous period observed, with a crude incidence rate of 1,15/100000 inhabitants, almost doubling the last reported data in Italy[4]. We found a 1:1 ratio between the two sexes and the age groups above 70 y.o. were highly affected. In the univariate analysis, we considered sex, age, site, maximum tumor diameter, T, status of the excisional margins, and presence of ulceration. The female sex showed an increased risk of death, increased by each 1 cm of tumor size and above age over 78 y.o. Surgical margins status and ulceration were not related to OS. In the multivariate analysis, only tumor size and age remained statistically significant (Table 2). Half of the patients died within the first 3 years. The 2-year survival rate was almost 60%, the 3-year survival rate was 50% and the 5-year survival was 48% (Fig.1).

	Univariate analysis		Multivariate analysis		
Prognostic factors	**HR (95% CI)**	**p-value**	**RC**	**HR (95%CI)**	**p-value**
Sex M/F	0,536 (0,316-0,910)	**0,021**	-0,334	0,716 (0,372-1,378)	0,318
Age <=78/>78	1,918 (1,142-3,222)	**0,014**	0,803	2,233 (1,127-4,422)	**0,021**
Anatomical site trunk/other	1,052 (0,378-2,924)	0,922	-	-	-
Maximum tumor size	1,175 (1,097-1,270)	**<0,001**	0,151	1,163 (1,015-1,332)	**0,030**
T parameter 1-4	1,379 (1,028-1,850)	**0,032**	-0,181	0,834 (0,489-1,422)	0,505
Infiltration margins absent/present	0,901 (0,487-1,634)	0,732	-	-	-
Ulceration absent/present	1,585 (0,915-2,746)	0,101	0,587	1,798(0,876-3,690)	0,110

Table 2. Statistical analysis.

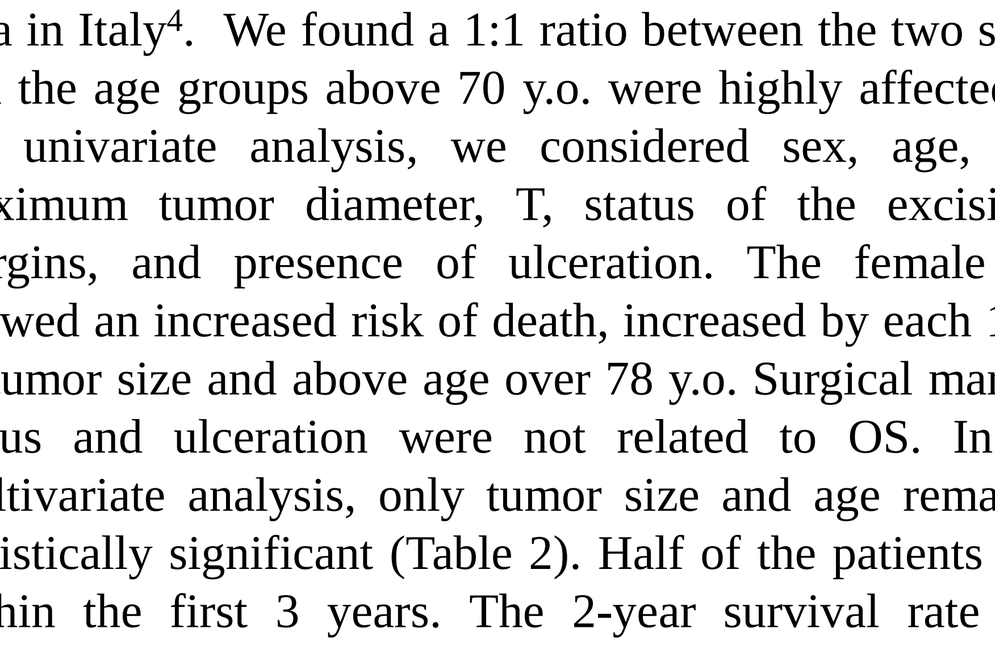

Figure 1. The overall survival graph is drawn through the Kaplan-Meier method. X-axis, months of observations; Y-axis, overall survival. Half of the patients died within the first 3 years. The 2-year survival rate was almost 60 %, the 3-year survival rate was 50 % and the 5-year survival was 48%

Conclusions

We have noticed that we have patients with fast progressing disease and many showing a slower progression and the investigation of specific biomarkers or other features may elucidate this striking difference in PFS and can potentially identify different subtypes of MCC. Considering the generally low incidence of MCC worldwide, a lot of efforts must be done to create or merge larger cohorts to validate our data, obtaining a better prognostic stratification.

References

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