SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Ferrara

Il Percorso del Paziente con Neoplasia Neuroendocrina nella Provincia di Ferrara

Società Medico Chirurgica

12 ottobre 2019

U.O.C. Radioterapia

Dr. Antonio Stefanelli

Background

- *I **tumori neuroendocrini (NET)** rappresentano un ampio gruppo di neoplasie rare che hanno origine dalle cellule del sistema neuroendocrino e che, per tale ragione, **sono in grado di colpire diversi organi**:*
- *intestino, pancreas, polmoni, tiroide, ghiandole surrenali e timo*

National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2019
Neuroendocrine and Adrenal Tumors

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RADIOTERAPIA ?

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)

Neuroendocrine and Adrenal Tumors

Version 1.2019 — March 5, 2019

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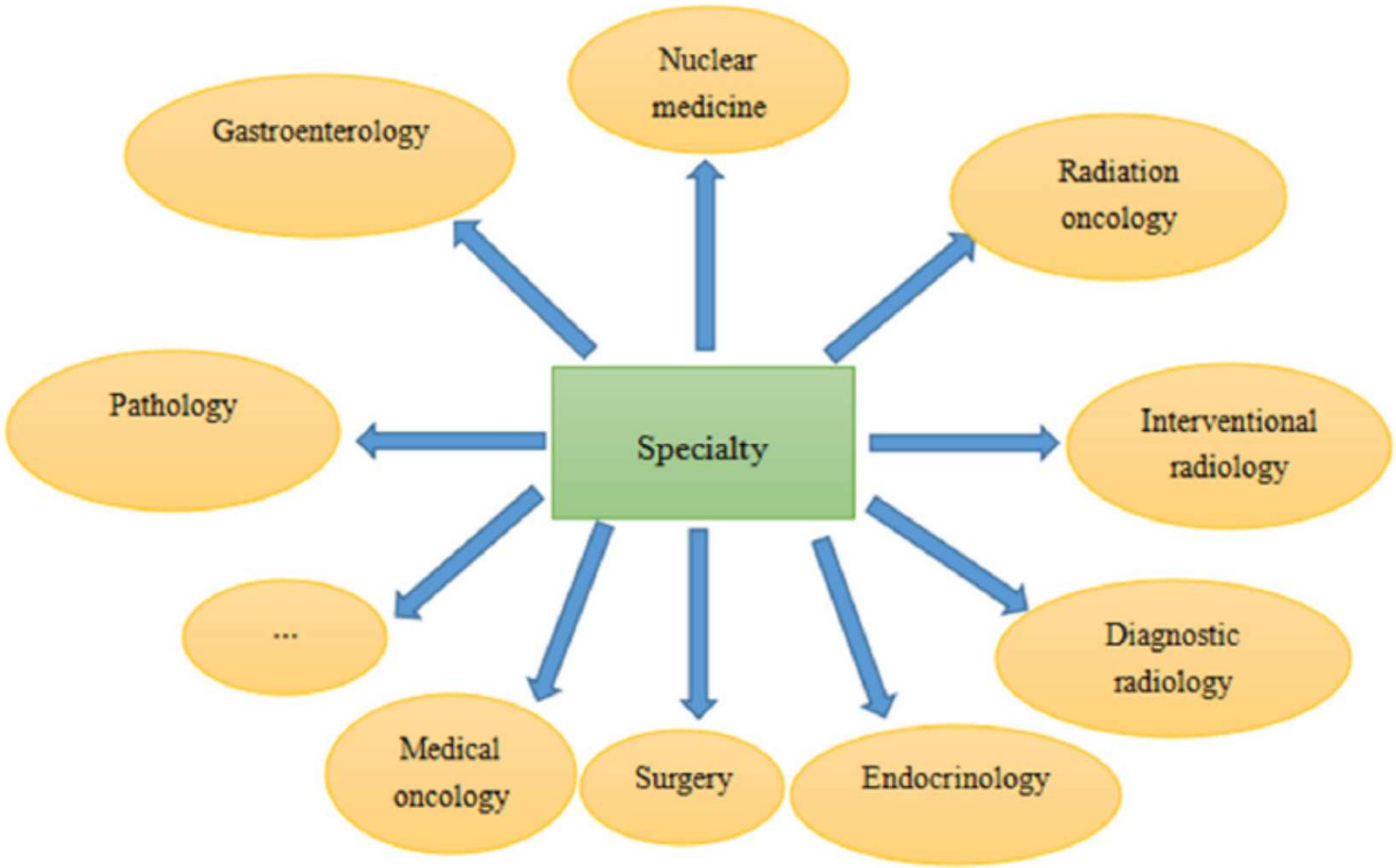

Nuclear medicine
Gastroenterology
Radiation oncology
Pathology
Specialty
Interventional radiology
...
Diagnostic radiology
Medical oncology
Surgery
Endocrinology

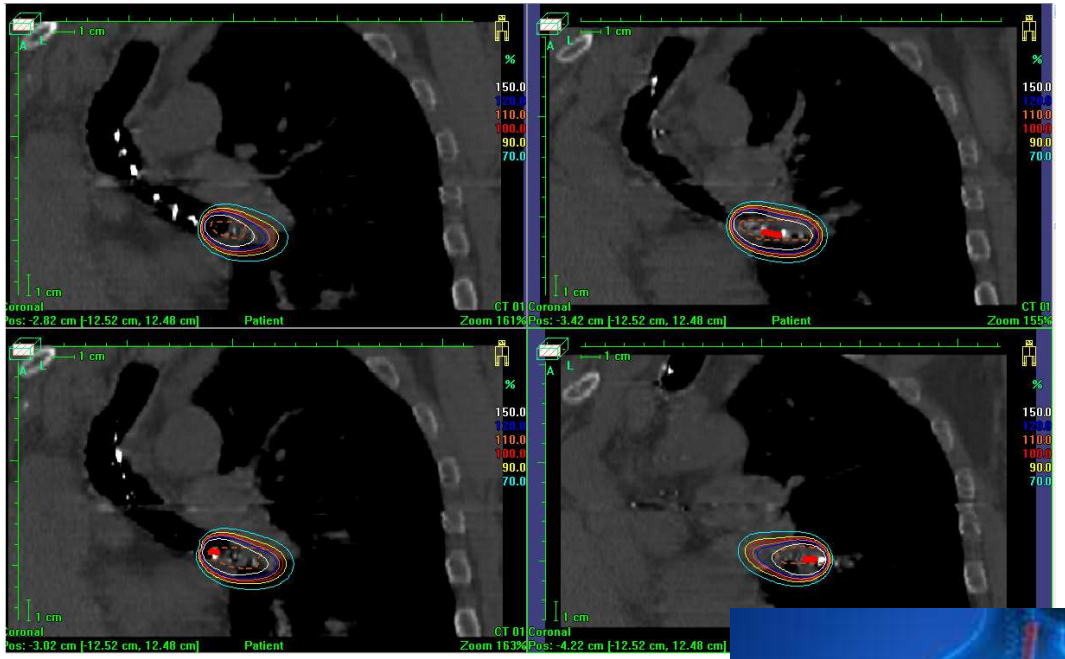
RADIOTERAPIA ESTERNA:

CONVENZIONALE (con tecniche evolute IMRT VMAT IGRT)

STEREOABLATIVA

IPOFRAZIONATA

BRACHITERAPIA ENDOLUMINALE



Contents lists available at ScienceDirect

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Original Article

External Beam Radiotherapy in the Treatment of Gastroenteropancreatic Neuroendocrine Tumours: A Systematic Review

Table 1
Characteristics of included studies

Reference	Primary	Grade	No. receiving RT alone/no. receiving RT with surgery	Dose/fractionation	Radiation technique (e.g. CRT versus SBRT/SRS)	Radiosensitising chemotherapy	Radiographic response	Local RFS	Overall RFS	Overall survival	Acute toxicity (grade 3+)	Late toxicity
RT to prin												
[11]												
[4]												
[5]												
								progressed	metastases at 13 months			
[6]	Pancreas	10 grade 2, 1 grade 3	11/0	50.4 Gy.	NA	ChemoRT (7) – cape	3 CR, 2 PR, 6 SD	3/11 patients recurred	15 months	32 months	Grade 3 toxicity (1)	Grade 3 toxicity (1)
[7]	Pancreas	6 grade 1–2, 11 grade 3	0/17	50.4 Gy/28	3D-CRT	7 NA, 10 A – 14 with chemoRT (5-FU or cape)	NA	2 year RFS 85%; 3/17 patients recurred	2 year RFS 46%	56 months	NA	NA
[8]	Pancreas	6 grade 1, 1 grade 2, 2 grade 3, 7 not specified	0/16	50.4 Gy/28	2D-CRT (6), 3D-CRT (6), IMRT (4)	ChemoRT (8) - 5-FU (4) or cape (4); RT (8)	NA	1/16 patients recurred	12 months	5 year OS 28%	Grade 3 enteritis (3)	NR
[9]*	Pancreas	NA	14/0	58.4 Gy	NA		Of 26 sites (10 primary, 16 metastases) – 13% CR, 26% PR, 56% SD, 4% PD	2.1 years		2 year	Grade 3 gastric perforation (1), grade 3 large bowel inflammation/ sepsis (1).	Grade 3 duodenal stricture (1), grade 3 gastrointestinal bleed (1), grade 5 duodenal perforation (1)
[10]	Pancreas	Well-differentiated	6/0	50.4 Gy/28 for 2 patients; unknown for other 4	3D-CRT	5-FU or capecitabine	4/5 PR	0/6 patients progressed	0/6 patients progressed	NA	Grade 3 fatigue (1)	NR
RT to metastases (4)							RT to metastases (4)					
[12]	Metastatic GEPNET to bone (34) or soft tissue (11)	NA	45/0	NA	NA			4 months		NA	NA	NA
[13]†	Metastatic GEPNET to brain	NA	NA	NA	WBRT or gamma knife SRS			21 months		19 months	NA	NA
[14]‡	Metastatic GEPNET to brain	NA	NA	NA	WBRT ($n = 24$), partial brain RT ($n = 7$), SRS ($n = 6$)			6.5 months	14.3 months	14.8 months	NA	NA
[9]	Metastatic PNET (liver and bone)	NA	21/0	24.6 Gy	NA		Of 26 sites (10 primary, 16 metastases) – 13% CR, 26% PR, 56% SD, 4% PD	1.5 years		NA	Nil	Nil

By contrast, the role of EBRT or chemoradiation as definitive treatment of pancreatic NETs will be difficult to define even with further evidence. As small PNETs may be

Carcinoid Tumor Arising from the Sphenoid Sinus Treated with Definitive Intensity-modulated Radiation Therapy: A Case Report

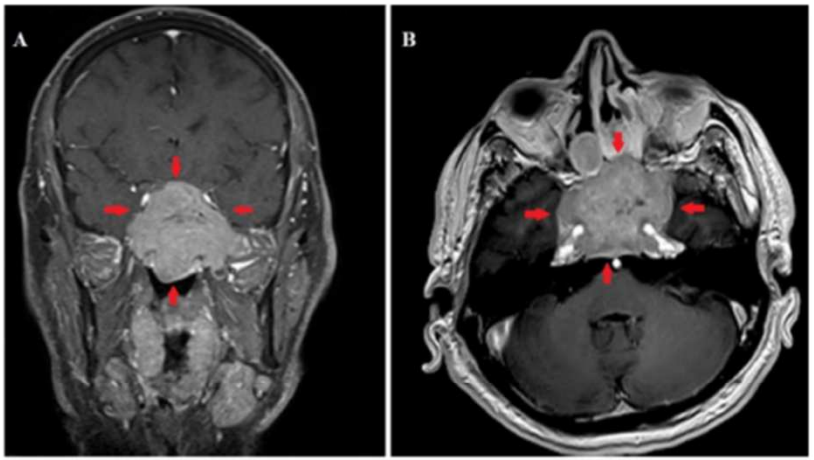


FIGURE 1: Coronal (A) and axial (B) T1-weighted magnetic resonance images with contrast showing a large unresectable sphenoid sinus tumor.

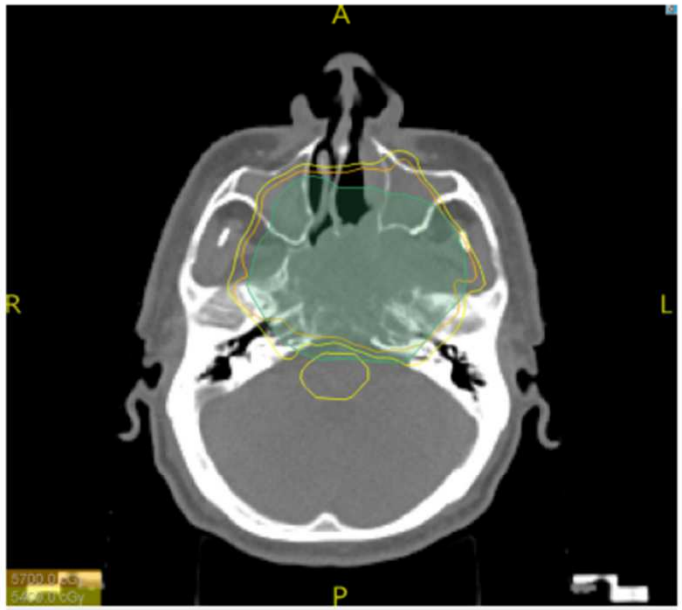


FIGURE 3: Axial image of a representative cut from the intensity-modulated radiation therapy plan showing adequate isodose lines coverage of the planning target volume.

Green: planning target volume (PTV)

Yellow: 90% isodose line

Orange: 95% isodose line

Background

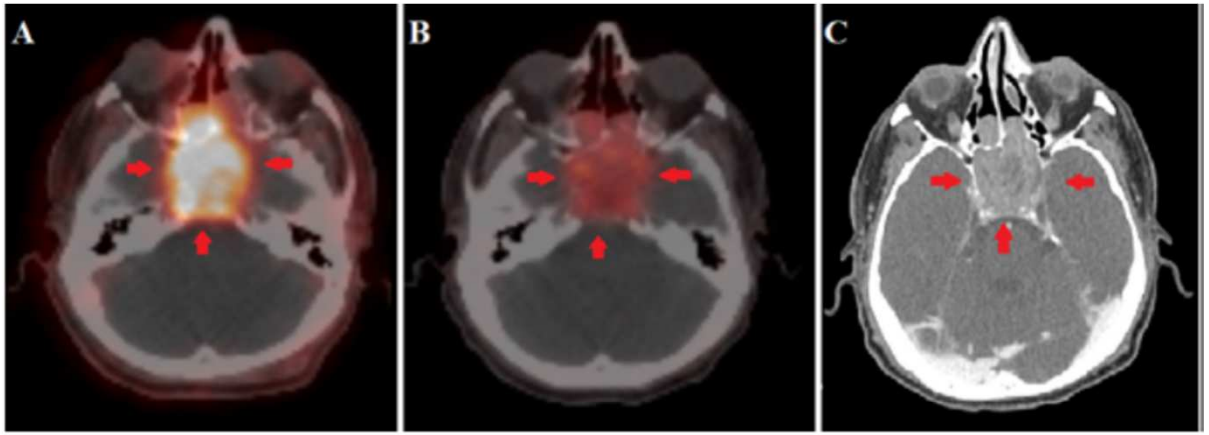
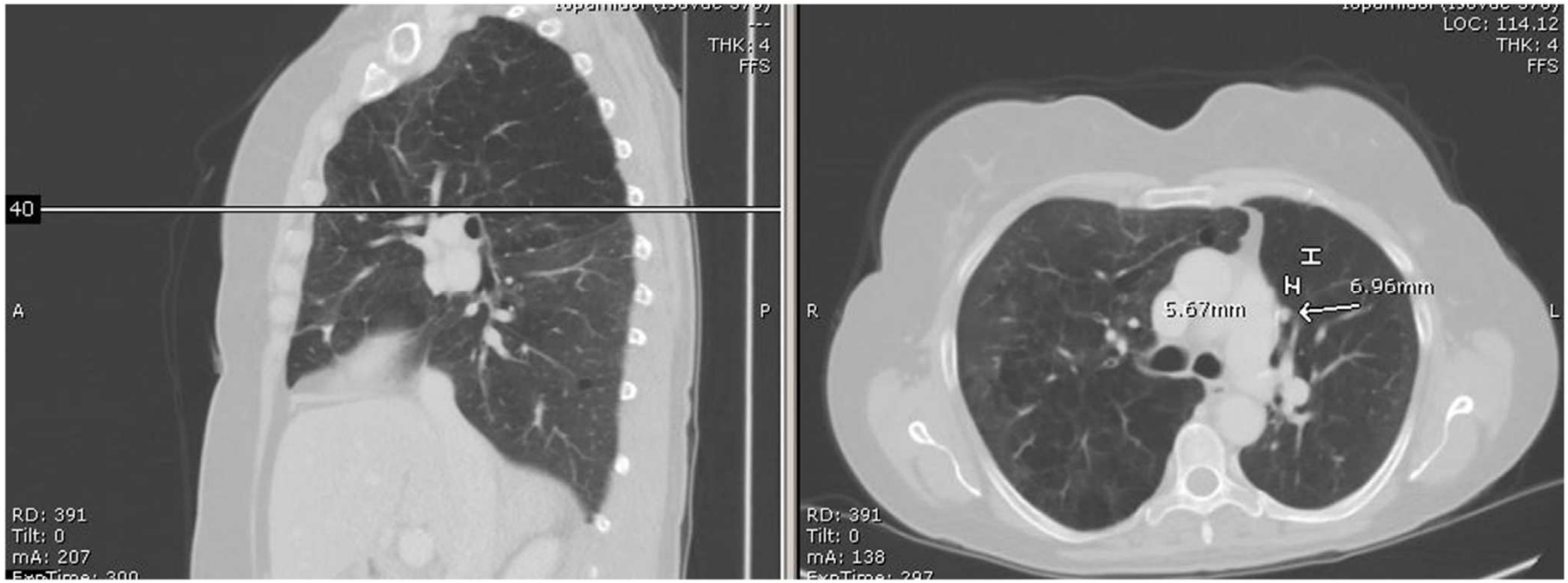


FIGURE 4: Gallium PET/CT scan (A, B); CT scan with contrast (C)

(A) Baseline gallium positron emission tomography/computed tomography (PET/CT) scan showing the large hypermetabolic sphenoid sinus tumor; (B) PET-CT scan three months after intensity-modulated radiation therapy (IMRT) showing a significant decrease in metabolic activity; (C) CT scan at the last follow-up three years after diagnosis showing stable disease.

Background

pulmonary large cell neuroendocrine carcinoma treated with stereotactic body radiation therapy



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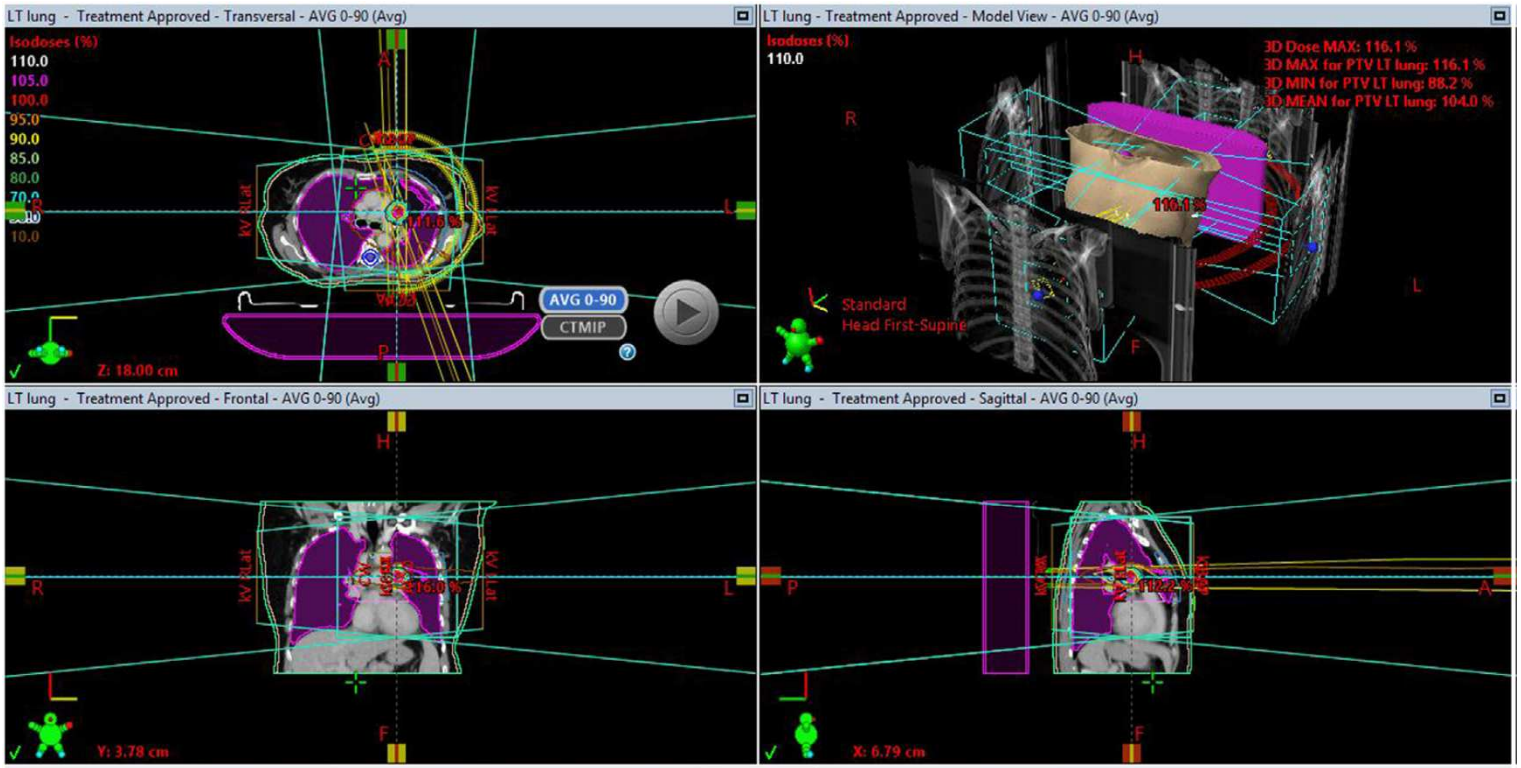

Dose Prescription | Field Alignments | Plan Objectives | Optimization Objectives | Dose Statistics | Calculation Models | Plan Sum

DVH	Structure	Approval Status	Plan	Course	Volume [cm³]	Dose Cover.[%]	Sampling Cover.[%]	Min Dose [%]	Max Dose [%]	Mean Dose [%]
	Trachea LgBronch	Approved	LT lung	C1	29.8	100.0	100.1	0.7	39.9	10.9
	Spinal Canal PRV	Approved	LT lung	C1	42.1	100.0	100.1	0.2	9.2	2.3
	Spinal Canal	Approved	LT lung	C1	11.9	100.0	100.0	0.3	8.5	2.4
	Skin	Approved	LT lung	C1	1455.4	100.0	100.0	0.0	20.2	0.6
	PTV LT lung	Approved	LT lung	C1	4.0	100.0	100.4	88.2	116.1	104.0
	Lungs sub ITV	Approved	LT lung	C1						
	ITV LT lung	Approved	LT lung	C1	0.7	100.0	100.7	99.9	116.1	107.9
	Heart Pericard	Approved	LT lung	C1	141.8	100.0	100.0	0.4	37.5	1.5

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Overview

Merkel Cell Carcinoma – Current Controversies and Future Directions

N. Steven *, P. Lawton †, M. Poulsen ‡

Surgery and Radiotherapy for Nodal Disease

Chemotherapy for Locoregional Merkel Cell Carcinoma

Conclusions

The management of patients with MCC is built on long experience, not randomised trials. MCC requires speedy and accurate diagnosis and staging for the most suitable locoregional and systemic treatments, which are best carried out by a tertiary multidisciplinary team.

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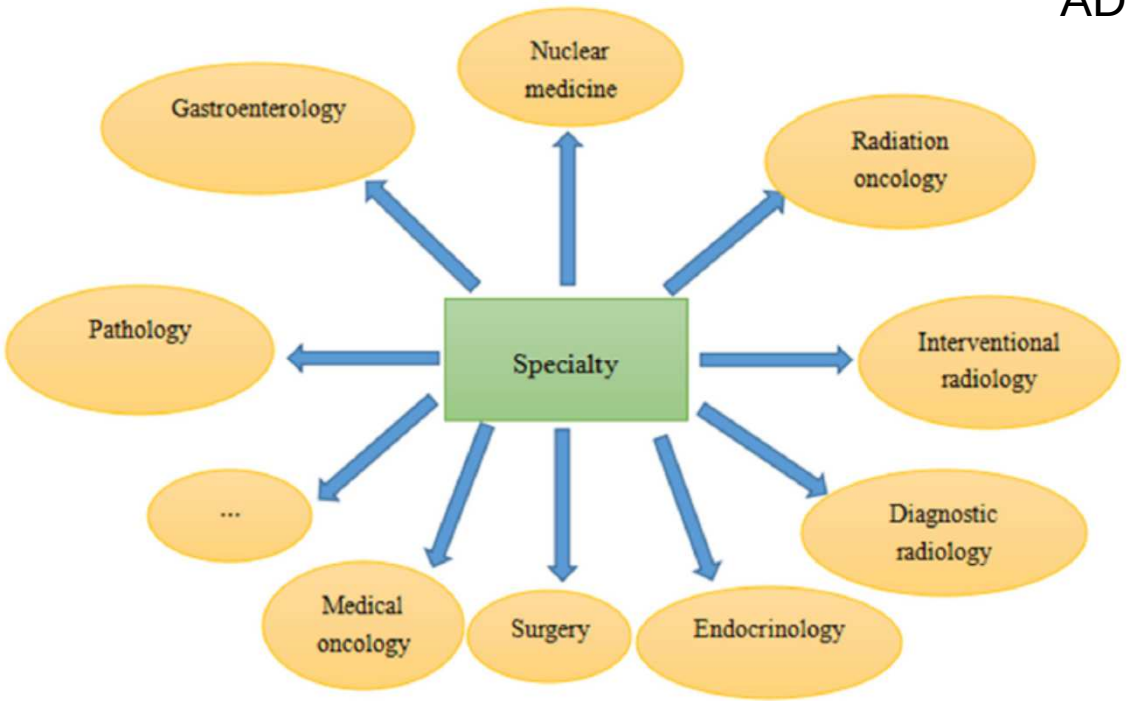
CURATIVO

PALLIATIVO



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