

**Prognostic value of  $^{18}\text{F}$ -FDG PET/CT assessment after radiotherapy of squamous cell carcinoma of the anus in patients from the national multicentric cohort FFCD-ANABASE**

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# Conflict of interest

- *No conflict of interest*



# Background



- What role does PET-CT play in current recommendations ?
  - PET-CT may be considered for staging and assist in RT planning [III, C].
  - There is insufficient evidence to recommend the routine use of PET-CT in the assessment of treatment response or follow-up [III, C].



Rao S et al, Ann Oncol, 2021



# Background

- What role could PET-CT play ?

- **Main objective**

Evaluation of the prognostic value of qualitative response to treatment assessed by PET-CT

# Materials and methods



## FFCD-ANABASE cohort

- French multicenter prospective cohort
- Conducted by the French Federation of Digestive Oncology (FFCD)
- Evaluation of anal canal tumor management practices and outcomes in France



# Materials and methods



## Inclusion criteria:

- Non-metastatic anal canal tumor
- Anatomopathology: squamous cell carcinoma
- Treated with first-line (chemo)radiotherapy
- Evaluation 4-6 months after treatment

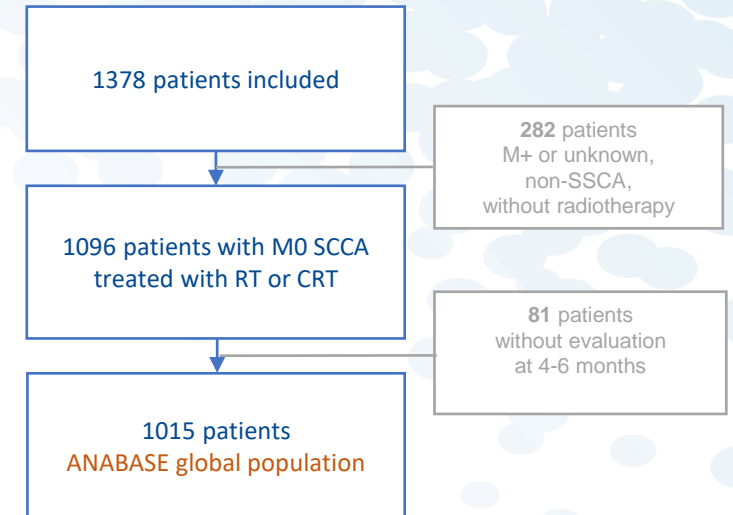


Figure: Flowchart



# Materials and methods

## Inclusion criteria:

- Non-metastatic anal canal tumor
- Anatomopathology: squamous cell carcinoma
- Treated with first-line (chemo)radiotherapy
- Evaluation 4-6 months after treatment
- PET-CT at baseline and 4-6 months after treatment

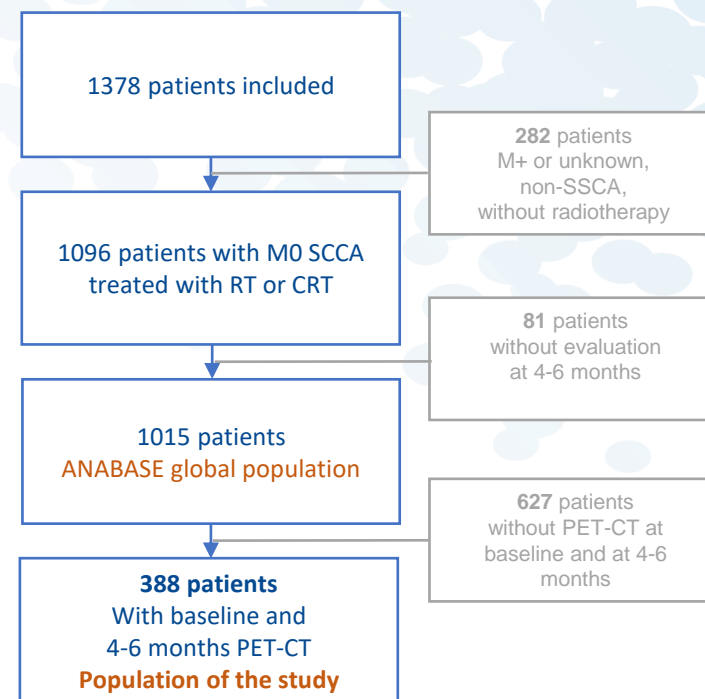


Figure: Flowchart

# Materials and methods



## Prospective data collection

### Baseline PET-CT:

- SUV max value
- Presence of significant fixation

### Post-therapeutic PET-CT:

- SUV max value
- Qualitative assessment of treatment response:
  - Complete metabolic response (CMR)
  - Partial metabolic response (PMR)
  - Stability
  - Progression

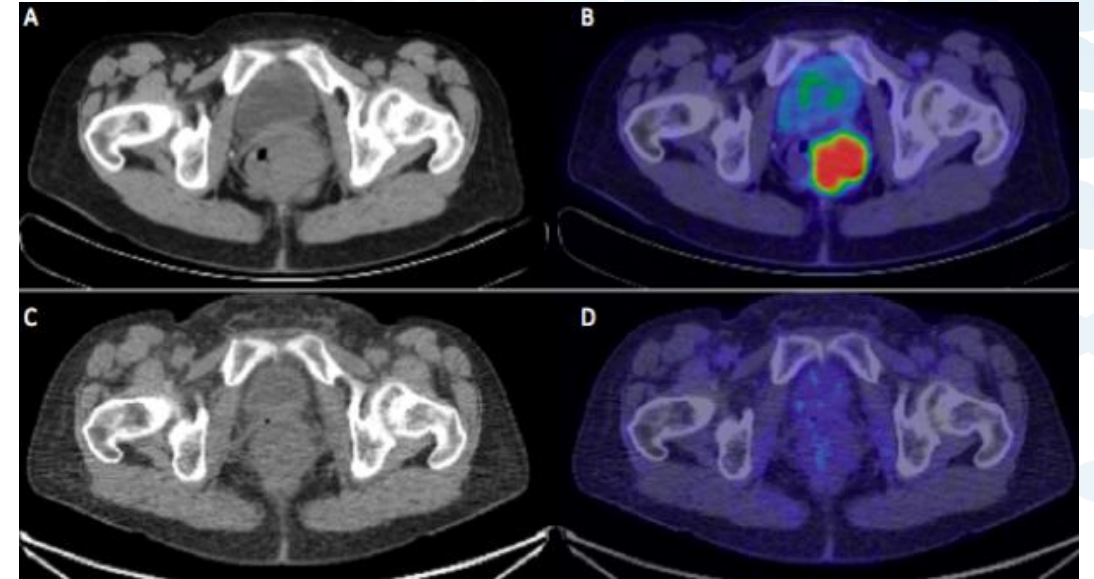


Figure: CT (A) and PET-CT (B) of a patient with T2 N0 squamous cell carcinoma of the anus before treatment ; CT (C) and PET-CT (D) in complete metabolic response 6 months after radiochemotherapy.



# Results



- **388 patients**
- Between January 2015 and April 2020
- **36 centers** in France
- Median follow-up: **32.5 months**

		<b>MEDIAN (RANGE) OR N (%)</b>
<b>Gender (n=388)</b>	Male	88 (22.7)
	Female	300 (77.3)
<b>Age (years) (n=388)</b>		65 (32-90)
<b>OMS status (n=383)</b>	0	258 (67.4)
	1	112 (29.2)
	2	9 (2.3)
	3	4 (1)
	4	0 (0)
<b>Stage (n=388)</b>	Early : T1-2, N0	147 (37.9)
	Locally advanced: T3-4 and/or N1	241 (62.1)
<b>Treatment (n=388)</b>	Radiotherapy	59 (15.2)
	Chemoradiotherapy	329 (84.8)

*Table: Population characteristics*

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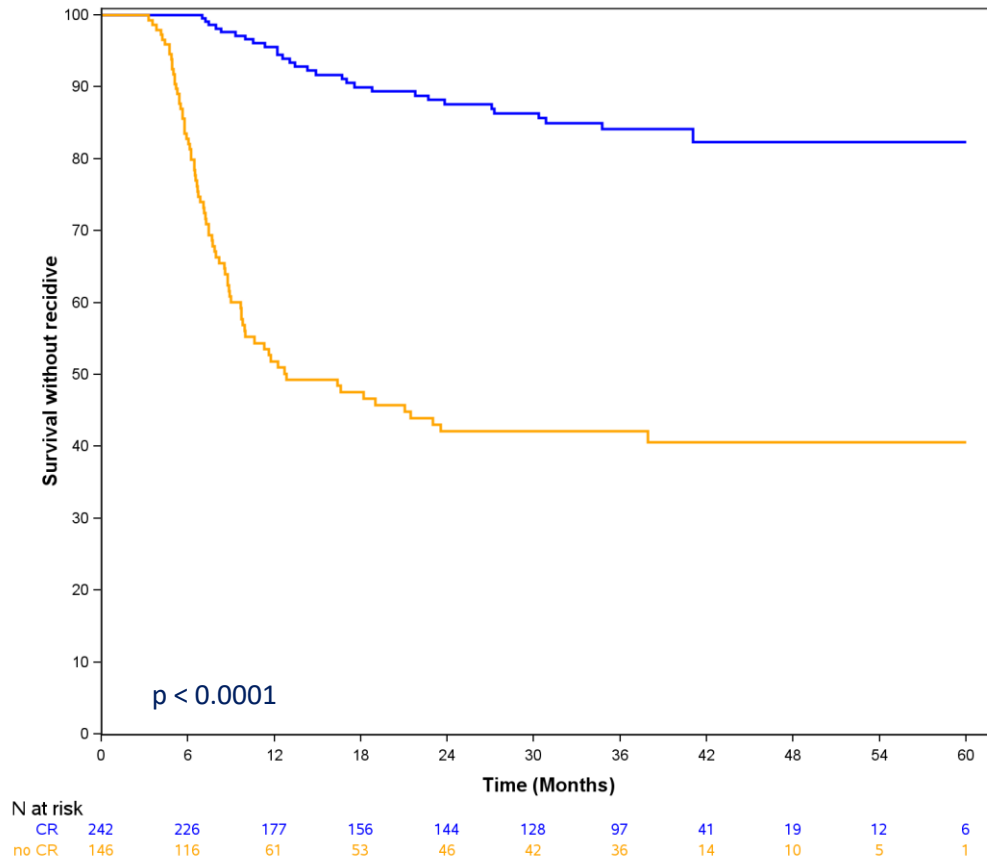


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# Results: recurrence-free survival



84.2% [CI95%:77.83-88.86] at 3 years in **CMR patients**

42.1% [CI95%:33.36-50.58] at 3 years in **non-CMR patients**

# Results: recurrence-free survival

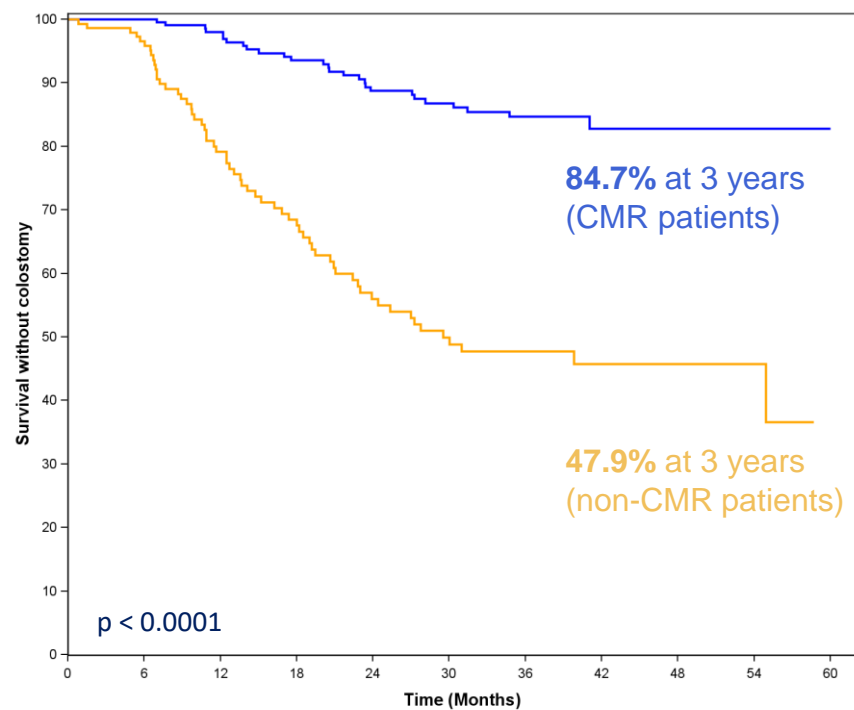


Post-treatment <sup>18</sup> F-FDG PET-CT	Event N	Event %	HR [CI95%] – p
<b>CMR</b>	29/242	11.98	Reference
<b>PMR</b>	27/91	29.67	<b>2.42</b> [1.41;4.15] – p < 0.001
<b>Stability</b>	7/12	58.33	<b>5.71</b> [2.48;13.17] – p < 0.001
<b>Progression</b>	43/43	100	<b>55.54</b> [30.13;102.38] – p < 0.001

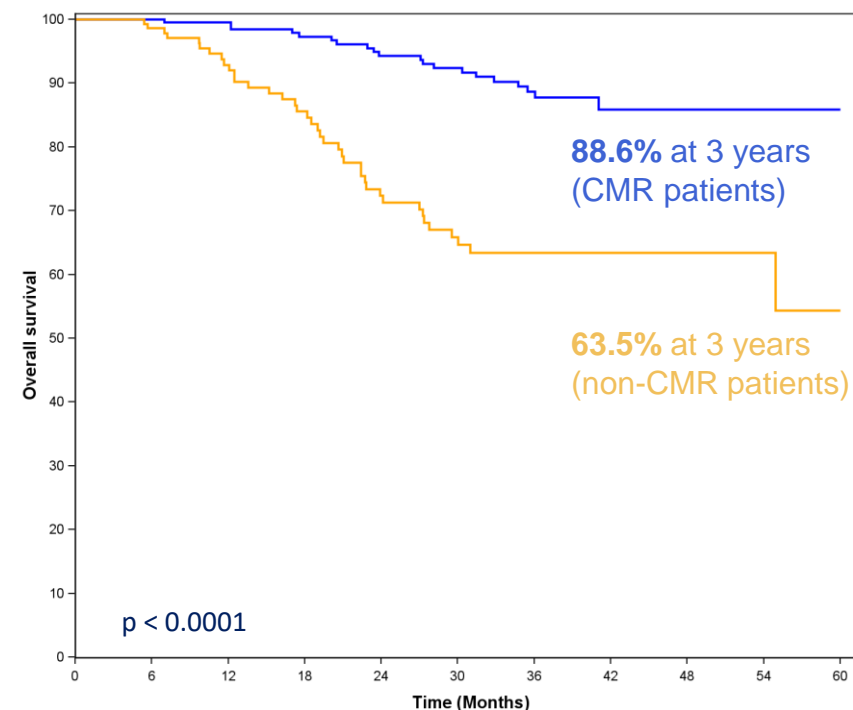
*Table:* Multivariate analysis of 3-year RFS



# Results: CFS and OS



Colostomy free-survival



Overall survival



# Discussion

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## T1-T2 N0 tumors

5.4% local recurrence at 3 years

3.5% metastatic recurrence at 3 years <sup>1</sup>



## T3-T4 and/or N1 tumors

18.1% local recurrence at 3 years

15.4% metastatic recurrence at 3 years <sup>1</sup>

<sup>1</sup> Martin D et al, Radiother Oncol, 2022





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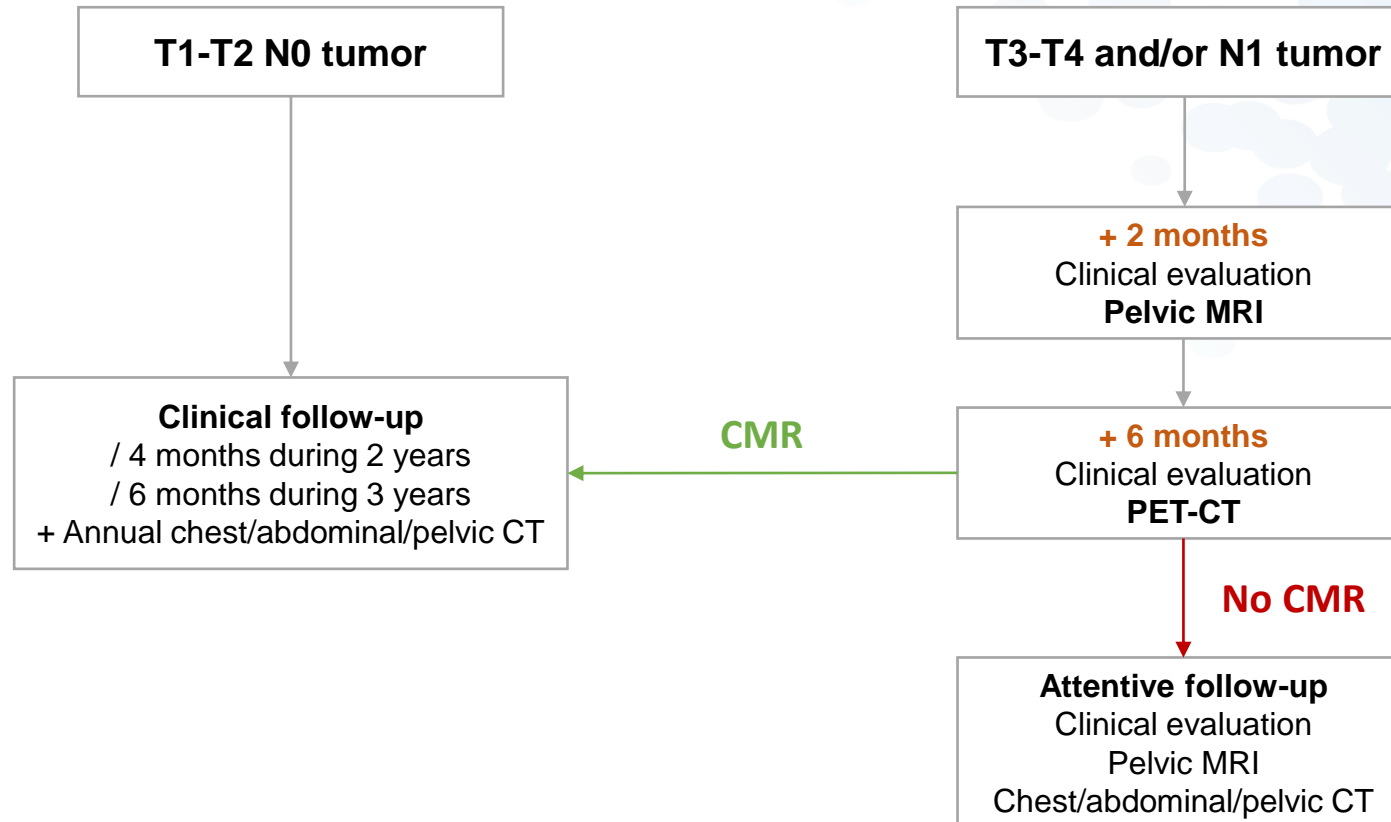


Figure: Proposition of follow-up decision tree



# Conclusion

- Major **prognostic value** of treatment response assessed by  $^{18}\text{F}$ -FDG PET/CT
- Low relevance for early-stage tumors follow-up
- **Interest in locally advanced-stage tumors ?**
  - Assessment of treatment response
  - Adaptation of follow-up modalities



**Thank you for your attention**