

# Ductal Adenocarcinoma of the Prostate (DAC): a comprehensive systematic review and meta-analysis of incidence, presentation and management.



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## INTRODUCTION

- Acinar adenocarcinoma (AAC) is the main subtype of prostate carcinoma (PCa), accounting for over 90% of all primary PCas.
- Ductal adenocarcinoma (DAC) is relatively rare but is the second most common subtype of PCa, first described in 1967.
- DAC is also known as ‘endometrioid’ or ‘papillary’ carcinoma.
- We systematically interrogated the literature in order to clarify the epidemiology, diagnosis, management, progression and survival of DAC.

## METHODS

- We conducted a literature search of the following databases: Pubmed, Scopus, Web of Science, Ovid Embase and Cochrane Library.
- Search terms: ‘prostate ductal adenocarcinoma’ OR ‘prostate endometrioid carcinoma’ and variations of each.
- Followed PRISMA criteria.
- Included: reports of a case/s of DAC.
- Excluded: review or meta-analysis, editorial comment, letter, book chapter or cancer biology.
- 100 studies eligible for inclusion:
  - 1,752,474 cases of PCa, of which 3,743 are DAC.
  - 46 case series and 54 case reports.

## RESULTS

- **Incidence** of DAC is 0.19% on meta-analysis (range 0.08-13.4%).
- Mean **PSA** at presentation is 9.7 mcg/L on meta-analysis (16.2 mcg/L for AAC -Packiam, 2015).
- 37% of DAC presents as **T3 stage** on meta-analysis (7% of AAC -Meeks, 2012).
- DAC has a poor **prognosis** compared to AAC on meta-analysis:
  - DAC CSS @ 5yrs = 81%, AAC CSS @ 5yrs = 96%.

Study	Outcome measure	Endpoint (yrs)	DAC	AAC
Wu et al, 2017	CSS	5	72%	93%
Khan et al, 2017	BCR	5	59%	47%
Packiam et al, 2015	OS	5	75%	77%
Tarjan et al, 2012	CSS	5	92%	100%
	BCR	5	62%	11%
	OS	5	92%	97%
Meeks et al, 2012	CSS	4	88%	96%
	OS	4	73%	83%

- **First treatments** for localised DAC are typically radical prostatectomy (RP) and radiotherapy (RT).

Study	Outcome measure	Endpoint (yrs)	RP	RT
Khan et al, 2017	BCR	5	59%	16%
Igdem et al, 2010		5	19%	14%
FrancaVilla et al, 2018	OS	5	86%	65%
Igdem et al, 2010		5	81%	64%
Leibovici et al, 2009	CSS	NA	8.1 yrs	5.1 yrs
Igdem et al, 2010		5	88%	93%

## CONCLUSIONS

- There is currently only low-level evidence (case studies) documenting DAC.
- DAC presents with a lower PSA and at a more advanced stage, compared to AAC.
- DAC has a poor prognosis, compared to AAC.
- There is currently no clinical consensus regarding the optimal treatment modality for DAC.
- Further research into the genetic composition, evolution, diagnosis and treatment of DAC is warranted.