ORIGINAL ARTICLE

The Prostate WILEY

Ten-year functional and oncological outcomes of a prospective randomized controlled trial comparing laparoscopic versus robot-assisted radical prostatectomy

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INTRODUCTION

- Minimally invasive prostatectomy has become standard of care
- Three trials have compared laparoscopic and robotic
  - 1st, 2011: Robotics had better erectile function at 12 months
  - 2nd, 2013: Robotic had better continence and potency at 12 months
  - 3rd, 2021: Robotics had better 3-month continence

Short term outcomes

- This group has reported 5-year outcomes in 2018
  - Throughout the 5-yr follow-up, RARP yielded better functional results compared to LRP

- **Aim: Present 10-year oncological and functional follow-up**

METHODS

- Single centre in Turin, Italy from Jan 2010 to Jan 2011
- Two arms: Lap and robotic
- Patients: 60 in each arm
  - 50-75 years
  - Localized prostate cancer with PSA <20
- Single surgeon: Dr. Porpiglia
  - Had performed 600 Lap and 100 Robotic prostatectomies prior to the study

METHODS

- Transperitoneal antegrade approach
- Unilateral / bilateral nerve spare as per the case
- LND as per the Briganti nomogram

- **Primary objective was functional objective (every 6 months)**
  - Continence: "Continent" if no pads or 1 pad per day
  - Potency: Potent with or without PDE-5 inhibitors

- Secondary objective: BCR free survival

RESULTS

- Study started with 120 patients in 2010

- At 10-year follow-up, 45 (37.5%) were lost
  - 9 had died; only one prostate cancer related death

- 75 patients analyzed at 10 years: 40 RARP and 35 LRP
  - No differences in baseline characteristics
  - Similar rates of nerve spare and LND
  - Similar pathological findings
  - No pN+
  - 27.5% positive margin rate in both arms

RESULTS

- 10-year continence outcome:
  - 92.5 % in robotic vs 80 % in lap Not statistically significant
  - This was 97.5 % and 83 % at the 5-year report

- ICIQ-SF
  - Significantly higher ‘completely dry’ patient in the robotic arm (10/40 vs 1/35)
  - Amount of urine loss also lesser in the robotic group

- Time to continence favoured the robotic approach throughout

RESULTS

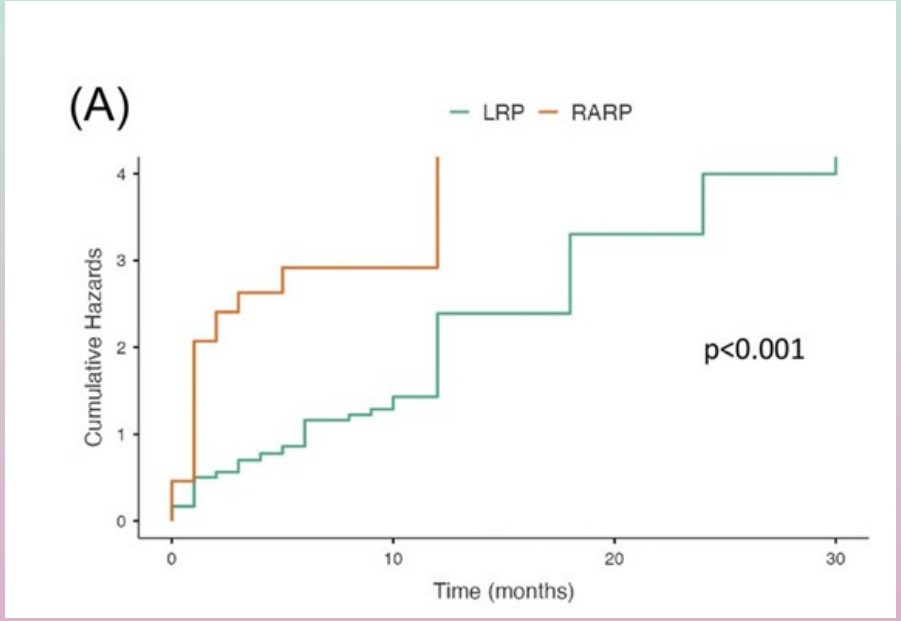
- 10-year potency outcome (25 patients in each arm):
  - 64 % in robotic vs 56 % in lap Not statistically significant
- IIEF
  - Lesser decrease in the robotic group
- Time to potency did not show a difference
- Predictors of potency recovery:
  - Younger age
  - Bilateral nerve spare

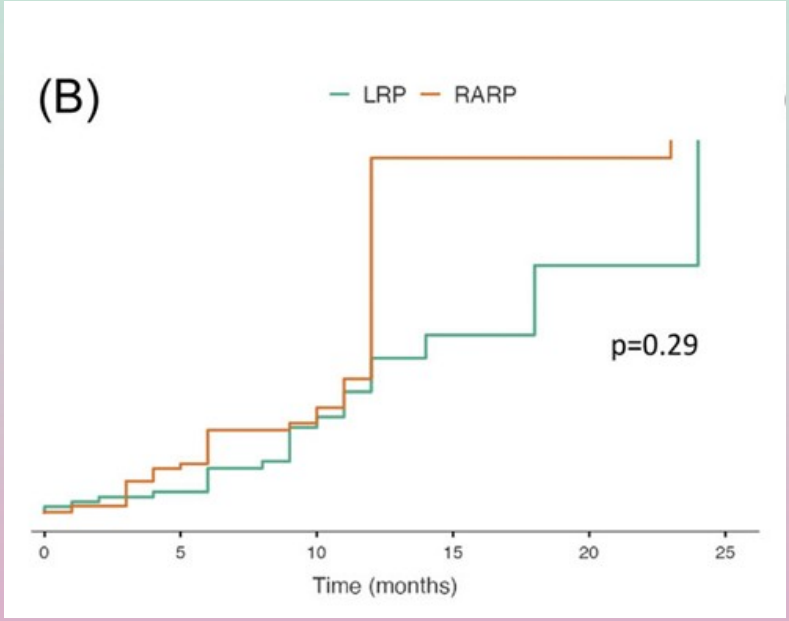
RESULTS

- 10-year BCR free survival:
  - 87.7 % in robotic vs 78 % in lap Not statistically significant
  - 5 patient had BCR in the period of year 5 to 10 years
- Comparable overall survival and cancer specific survival

DISCUSSION

- Longest follow-up report from a trial comparing lap and robotic prostatectomy
- At the 5 year point, robotic arm had significantly improved continence and potency outcomes
- At 10 years, this difference was not statistically significant
  - 40% patients were lost to follow-up
  - Age related worsening of continence and potency outcomes
- **Should we really be comparing functional outomes so far out from**


(A)
LRP
RARP
Cumulative Hazards
0
1
2
3
4
0
10
20
30
Time (months)
p<0.001


(B)
LRP
RARP
0
5
10
15
20
25
Time (months)
p=0.29

DISCUSSION

- The study was powered to detect a difference in outcomes at 3 months !!

- Authors mention some large non-randomized series where outcomes with lap and robotic are comparable

- "A sparse version partial least square-discriminant analysis (PLS-DA) was tested as supervised multivariate data analysis to identify the variables that characterize more the patients who underwent RARP or LRP" → lap patients did worse.

DISCUSSION

- Patients also answered a 46Q EPIC Questionnaire → 90% in both groups were satisfied
  - The robotic arm was significantly better at 1 and 5 years.

- Limitations
  - Surgical technique has evolved → more so in robotics
  - Small sample size with drop out at 10 years
  - Single surgeon
  - Mostly organ confined disease patients

Summary

- One may offer lap or robotic depending upon one's resources and expertise
- Largely, functional outcomes are better with the robotic approach, especially with ever advancing refinements in technique

- Few good lap surgeons and many good robotic surgeons → the impact of the learning curve

- High volume surgeons/centres definitely deliver better outcomes