Adjuvant or Salvage?10-y results of the AIRO Group Prostate cancer multicentre prospective trial

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Introduction & Objectives

The use of postoperative radiotherapy (RT) in patients (pts) at risk for local recurrence is well established for many tumours. The postoperative subgroup of the AIRO Working Group on Prostate RT carried out a multi-institutional prospective study to evaluate the impact of Adjuvant RT (PORT) and Salvage RT (SART) on biochemical outcomes in prostate cancer patients.

Material & Methods

Between January 2002 and December 2003, data of 440 pts (mean age: 65 years, range 42-81) treated with radical prostatectomy (RP) were collected by 14 Italian RT Departments. Of the 411 pts available for the 10 year analysis, 284 (69.1%) received PORT (started <6 months after RP) and 127 underwent SART because of increasing PSA level after having been undetectable or persistently elevated PSA (> 6 months after RP). GS ≥ 7 and positive surgical margins (SM+) have been shown by 69% pts and 74.5% respectively; 76.5% presented pT3-4, 27 (6.7%) positive pelvic nodes; 163 pts (40.2%) revealed seminal vesicles invasion (SVI). All pts received RT to the prostatic fossa. Pelvic RT was delivered to 111 pts (27%). Androgen deprivation (ADT) was prescribed to 47,3% pts. Among 127 SART pts, pre-RT PSA level was 1 ng/mL or less in 56 pts (44,1%).

Results

Ten year analysis shows that 259 pts are disease free and 331 are still alive. 10y Overall Survival and biochemical control (BC) rate are 75.9% and 57.8% respectively. On univariate analysis, PORT vs SART, SVI and GS ≥ 7 significantly influenced 10-y BC rate: 62.7% in PORT vs 45.6% in SART (p = 0.003), 56.9% in pts with SVI vs 65.6% pts without SVI (p < 0.001), 52.5% if GS ≥ 7 and 69.8% if GS < 7 (p= 0.003). SM+, pT and pN stages, ADT or pelvic RT had no impact on BC rate. SVI and PORT vs SART are variables associated with BC on multivariate analysis. Only pre-RT PSA level significantly influenced disease free survival in SART setting: when the pre-RT PSA ≤ 1 ng/mL, 59.8% pts were disease free at 10-y compared with 33.5% of those treated at PSA levels > 1 ng/mL (p= 0.017).

Conclusions

Pts in PORT group, pts without SVI and with GS < 7 show better BC rates . Postoperative RT delivered in high risk prostate cancer patients can reduce the impact of other common unfavourable prognostic factors (pT stage, positive surgical margins). Early referral for SART offers better BC after RP. This prospective multicenter study confirms outcomes of other series.

Multicenter Prospective Study January 2002 - December 2003

BOLOGNA BELLARIA	35	8,5%
BIELLA	8	1,9%
CREMONA	50	12,2%
AVIANO CRO	47	11,4%
CANDIOLO IRCC	66	16,1%
GENOVA IST	14	3,4%
LECCO	33	8,0%
MODENA	10	2,4%
MONZA POLICLINICO	33	8,0%
MONZA S GERARDO	30	7,3%
TORINO MAURIZIANO	25	6,1%
R EMILIA	35	8,5%
UDINE	10	2,4%
VARESE	15	3,6%
Total	411	100.0%

Tot pts (411)	Age (ys)	FUP (mts)
Minimum	42	6
Maximum	81	154
Mean	65	93
Median	66	108

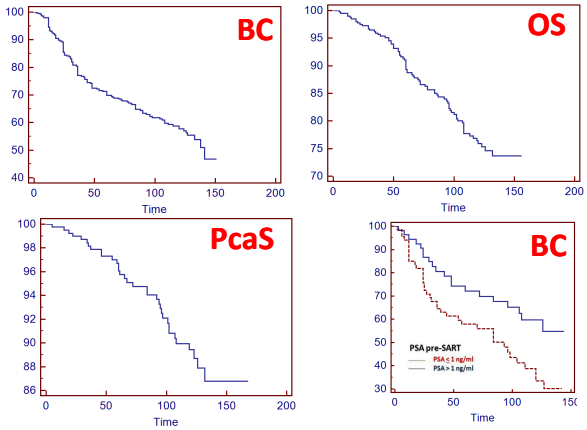
Patients' characteristics	Num pts	%
pT3-4	311	76.8
pN +	27	6.7
SM +	286	74.5
GS ≥ 7	269	69
SVI	163	40.2

All pts were treated to the prostatic bed

All pts received 3D-CRT

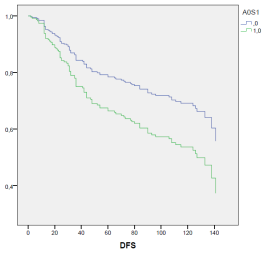
Pre-RT PSA Group	Frequency	%	Cum %
PSA ≤ 0,5 ng/ml	30	24,8%	24,8%
PSA = 0,51-1 ng/ml	26	21,5%	46,3%
PSA = 1,01-1,5 ng/ml	11	9,1%	55,4%
PSA ≥ 1,5 ng/ml	54	44,6%	100,0%
Total	121	100,0%	100,0%

Treatment characteristics	
PORT (284 pts) vs SART (127 pts)	69.1% vs 30.9%
Mean RT dose (prostatic fossa)	67.8 Gy
RT Doses range (prostatic fossa)	59.4-76 Gy
Whole pelvic RT (111 pts)	27 %
ADT	47.3 %



BC – Multivariate Analysis

	B	SE	Wald	df	Sig.	Exp(B)	IC 95,0% Inferiore	IC 95,0% per. Superiore
ETA	,011	,019	,307	1	,580	1,011	,973	1,050
AOS1	,522	,257	4,111	1	,043	1,685	1,018	2,790
pN	,474	,341	1,928	1	,165	1,606	,823	3,134
pT			,598	3	,897			
NomevarpT(1)	7,520	61,982	,015	1	,903	1844,744	,000	1,060E+056
NomevarpT(2)	7,272	61,982	,014	1	,907	1439,952	,000	8,270E+055
NomevarpT(3)	7,263	61,984	,014	1	,907	1427,029	,000	8,229E+055
VS	,791	,250	10,026	1	,002	2,206	,352	3,595
OT	-,087	,219	,159	1	,690	,916	,597	1,407
Rtpelvici	-,123	,251	,242	1	,623	,884	,541	1,445
LOGGIA	,004	,029	,019	1	,891	1,004	,948	1,064
GSgt7_A	,454	,289	2,844	1	,092	1,574	,929	2,668
MARG	,140	,241	,337	1	,562	1,150	,718	1,842
INVPN	,041	,218	,035	1	,852	1,042	,679	1,597
PSAPRERT	,002	,001	1,756	1	,185	1,002	,999	1,004



Prostate Cancer Specific Survival (PcaS) Multivariate Analysis

	B	SE	Wald	df	Sig.	Exp(B)	IC 95,0% Inferiore	IC 95,0% per. Superiore
ETA	,040	,044	,795	1	,373	1,040	,954	1,135
AOS1	-,293	,633	,214	1	,644	,746	,216	2,582
pN	-,475	,938	,257	1	,612	,622	,099	3,895
pT			1,753	3	,625			
NomevarpT(1)	7,375	154,894	,002	1	,962	1596,154	,000	1,119E+135
NomevarpT(2)	6,384	154,894	,002	1	,967	592,185	,000	4,154E+134
NomevarpT(3)	-2,298	180,463	,000	1	,990	,100	,000	4,092E+152
VS	1,182	,598	3,914	1	,048	3,262	1,011	10,526
OT	,085	,467	,033	1	,855	1,089	,436	2,720
Rtpelvici	,128	,533	,058	1	,810	1,137	,400	3,231
LOGGIA	,031	,062	,254	1	,614	1,032	,914	1,164
GSgt7_A	1,174	,774	2,300	1	,129	3,236	,709	14,757
MARG	,237	,530	,199	1	,655	1,267	,448	3,581
INVPN	,550	,600	1,209	1	,271	1,733	,650	4,616
PSAPRERT	,005	,002	6,314	1	,012	1,005	1,001	1,009