QoL in organ preservation

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According to conventional wisdom, organ sparing strategies improve the quality of life (QoL) and anorectal function when compared to TME.

The aim of this presentation is to test this belief.

Case 1.
A fit patient aged 60 years presenting with a cT2 rectal cancer 3 cm in diameter suitable for anterior resection (AR) alone.

- AR alone
- RT watch-and-wait or AR for residual tumour (RT / W&W strategy)
- RT local excision with completion TME for ypT2-3 (RT / LE strategy)

Which of these three options assures the best QoL / anorectal function?

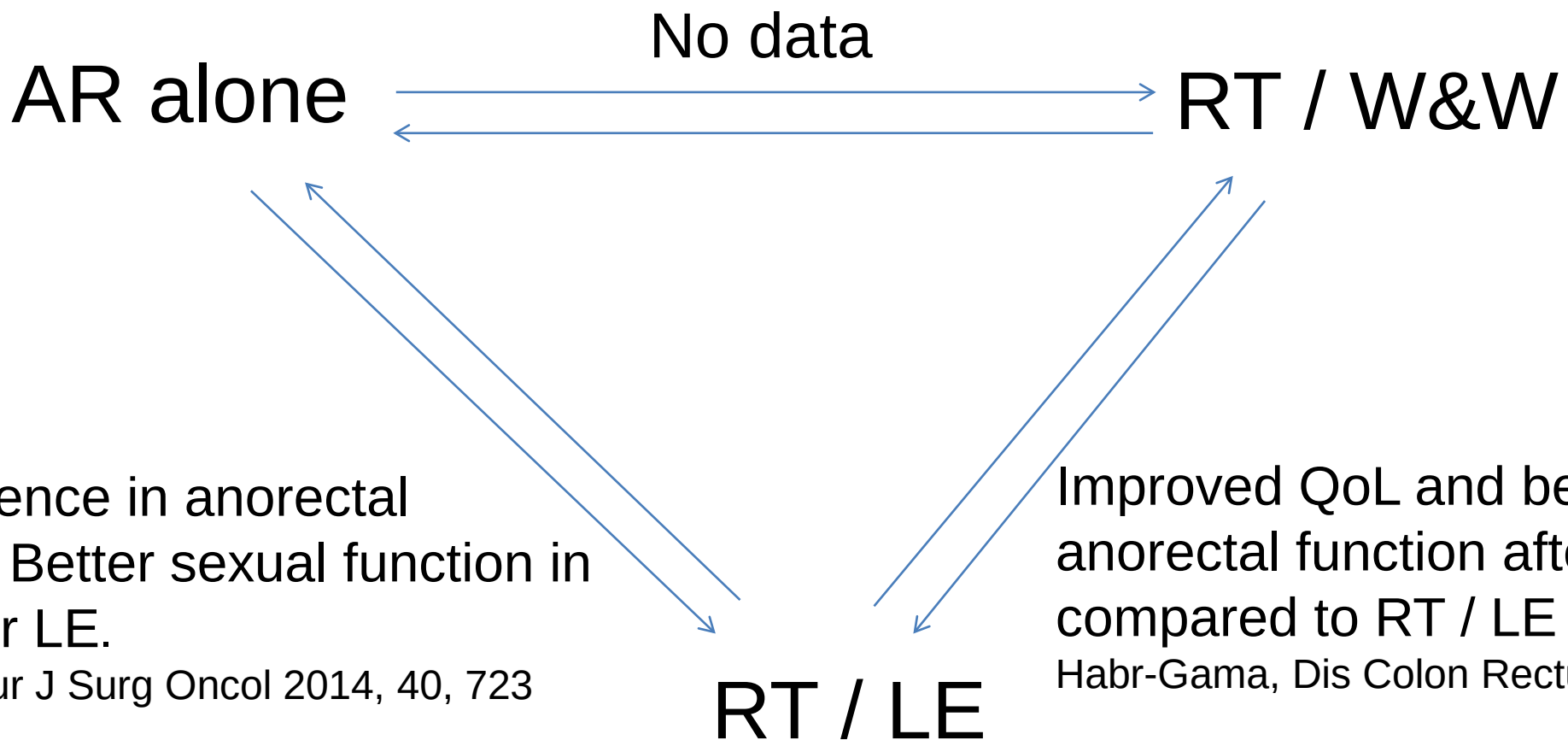
Case 2

Another fit patient aged 60 years presenting with cT3b mrf-rectal cancer 4 cm in diameter suitable for AR.

- RT + AR
- RT / W&W strategy
- RT / LE strategy

Which of these three options assures the best QoL / anorectal function?

Case 1: Evidence from studies directly comparing treatments



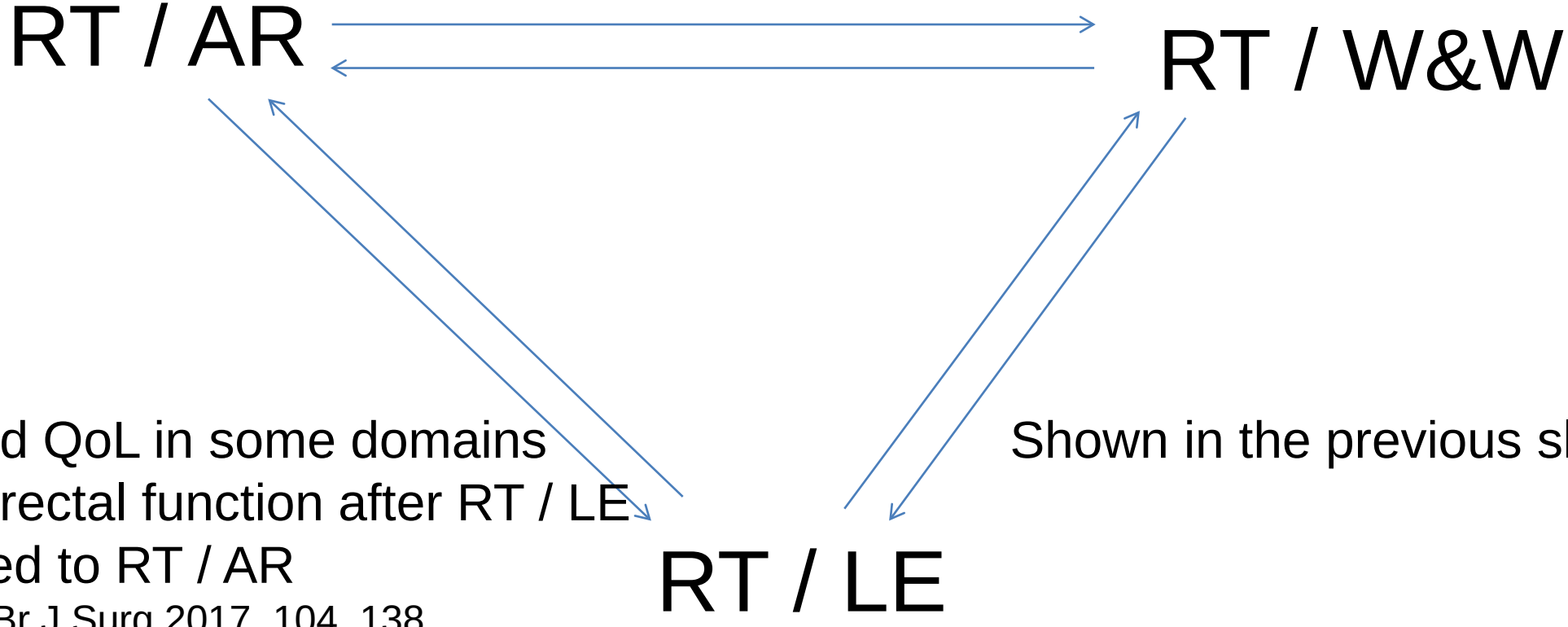
No difference in anorectal function. Better sexual function in men after LE.
Gornicki, Eur J Surg Oncol 2014, 40, 723

Improved QoL and better anorectal function after RT / W&W compared to RT / LE
Habr-Gama, Dis Colon Rectum 2016, 59, 264

Case 2: Evidence from studies directly comparing treatments

Improved QoL, anorectal and sexual functions after RT / W&W compared to RT / AR

Hupkens, Dis Colon Rectum 2017, 60, 1032



Improved QoL in some domains and anorectal function after RT / LE compared to RT / AR

Puciarelli, Br J Surg 2017, 104, 138

Shown in the previous slide

Adverse effects that can affect QoL

- Major low anterior resection syndrome (high LARS score) correlates with impaired QoL.

Emmertsen, Ann Surg 2012, 255, 922
Chen, Clin Colorectal Cancer 2015, 14, 106

- Abdomino-perineal resection (APR) is a treatment undesired by patients and associated with impairment of some QoL aspects.

Emmertsen, Colorectal Dis 2017, epub

The sum of patients with a high LARS score and those with permanent stoma might be regarded as a proxy measure of QoL.

Parameters chosen for modelling

% of patients undergoing W&W (routine preoperative RT schedules)

- Small tumours, mostly cT2

49% (29%) Habr-Gama Int J Radiat Oncol Biol Phys 2014, 88, 822 (Bujko, Acta Oncol. 2017, 56, 1152)

- Adanced tumours, mostly cT3

12% Renehan, Lancet Oncol, 2016, 17, 174

Strong evidence
Week evidence
Opinion

25% local re-growth in patients undergoing W&W

van der Valk, J Clin Oncol 35, 2017, suppl 48 abstract 521

Parameters chosen for modelling cont.

AR

10% permanent stoma (temporary stoma not closed + APR for recurrence)

RT / LE strategy

61% undergo LE alone with 10% of local recurrence rate

39% of patients needing completion TME after LE for ypT2-3

Of these

18% (30%) undergo APR

Rullier, Lancet. 2017, 390 (10093), 469

	% of APR	
TME	LE + TME	difference
0%	18%	18%
11%	41%	30%

Rullier, Lancet 2017, 390(10093), 469
Morino, Surg Endosc. 2013, 27, 3315

Strong evidence
Week evidence
Opinion

Parameters chosen for modelling cont.
% of patients with major LARS

35%: AR alone

64%: RT + AR

Bregendahl, Colorectal Dis 2013, 15, 1130: Danish population-based data, N=938: Similar findings from Dutch TME study N=242, Chen, Clin Colorectal Cancer 2015, 14, 106

20%: RT + LE Gornicki, Eur J Surg Oncol 2014, 40, 723

36% (18%): W&W Hupkens, Dis Colon Rectum 2017, 60, 1032; van der Sande, yesterday's talk

Strong evidence
Week evidence
Opinion

Example of calculation
% of patients with adverse events (major LARS or permanent stoma): Intention-to-treat analysis

Strategy of AR alone

90% AR x 35% major LARS = 32% adverse events

10% permanent stoma = 10% adverse events (temporary stoma not closed + APR for recurrence)

Overall adverse events rate: 32% + 10% = 42%

Case 1: patient suitable for AR alone

% of patients with adverse events (major LARS or permanent stoma)

Intention-to-treat analysis

AR alone strategy	42%
RT + LE strategy	43% (45% pessimistic version)
W&W strategy	49% (61% pessimistic version)

Many limitations exist when interpreting the above proportions.

Case 2: patient suitable for AR and requiring preop. RT

% of patients with adverse events (major LARS or permanent stoma)
Intention-to-treat analysis

RT + AR strategy 68%
RT + LE strategy 43% (45% pessimistic version)
RT + W&W strategy 49% (61% pessimistic version)

Many limitations exist for interpreting the above proportions.

Conclusions

Modelling suggests that organ sparing strategies for patients with a tumour suitable for AR:

- do not improve QoL and anorectal functions compared to AR alone
- do improve QoL and anorectal functions compared to AR combined with preoperative RT

Case 1: patient suitable for AR alone
Why the modelling suggests that the organ sparing strategies do not assure better QoL / anorectal function?

AR alone strategy 42%

RT + LE strategy 43% (45% pessimistic version)

Large proportion of patients undergo completion TME

W&W strategy 49% (61% pessimistic version)

Large proportion of patients receive unnecessary radiation before AR

Thank you for your attention