

with Prof. Köhne, Dr. Modest and Dr. Vecchione

Madrid (Spain)
Sunday September 10th 2017



THE DEBATE



How long should treatment be within an adjuvant setting - 3 or 6 months?

Differing Perspectives	The Experts
The case for 3 month treatment	Dr. Loredana Vecchione
The case for 6 month treatment	Dr. Domink Modest
Concluding Remarks	Prof. Claus-Henning Köhne





3 MONTHS ADJUVANT TREATMENT FOR STAGE III COLON CANCER:

WHAT A TERRIFIC IDEA, ISN'T IT?

Loredana Vecchione

Medical Oncologist Charité Comprehensive Cancer Center Berlin



ASCO DAILY NEWS



Risk-Based Approach to Chemotherapy Duration Recommended for Stage III Colon Cancer

JUNE 4, 2017

Shi Q, ASCO 2017

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SCOT: CAPOX for 3 Months Is Not Inferior to 6 Months in Colorectal Cancer

JUNE 13, 2017

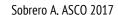
Iveson T, ASCO 2017



In view of these findings, investigators in the IDEA collaboration reached a clinical consensus to recommend a riskbased approach to selecting adjuvant chemotherapy for stage III colon cancer. The consensus recommends 3 months of adjuvant chemotherapy for patients with low-risk disease, defined as T1-3N1 tumors, which includes approximately 60% of stage III patients. For high-risk patients, defined as patients with T4 or N2 tumors, decisions on use of the shorter course should be based on an individual assessment of tolerability, risk, and choice of regimen. ...SCOT met its non inferiority target....therefore 3 months treatment should now be considered for many patients...

TOSCA Supports Shorter Adjuvant CT Duration for Resected Colon Cancer

JUNE 13, 2017



"Because the difference in RFS is so limited ... but the toxicity so much better, 3 months of oxaliplatin-based chemotherapy can be considered another standard option for the adjuvant treatment of resected colon cancer," presenter Alberto F. Sobrero, MD, of the Ospedale San Martino, in Italy, said.



"The last 24 hours, with the Plenary Session and today's talks, will change the lives of hundreds of thousands of [patients with] colorectal cancer each year worldwide," Dr. Meverhardt said

On the basis of the results of TOSCA, SCOT, IDEA France, and other IDEA trials, Dr. Meyerhardt plans to offer 6 months of FOLFOX to his patients with T4 or N2 disease. For those with T1-3N1 disease, he will offer 3 months of CAPOX or FOLFOX to reduce toxicity and alleviate the logistical burden of treatment; he cited his preference for CAPOX here also of its slightly more preferable efficacy data.

Meyerhardt J, ASCO 2017





ASCO DAILY NEWS

Medscape Coverage from the American Society of Clinical Oncology (ASCO) 2017 Annual Meeting

Less Is More: Patients With Colon Cancer Get a Chemo Break

Kate Johnson June 04, 2017

CHICAGO — Most patients with low-risk stage III colon cancer will likely have their oxaliplatin-based adjuvant chemotherapy regimen cut in half, based on findings of the largest prospective trial on the issue to date, reported here at the American Society of Clinical Oncology (ASCO) 2017 Annual Meeting.



For the 60% of patients who have low-risk tumors in do not recommend more than 3 months of chemotherapy wan osaliojatin-based regimen," he said. "That applies to 20,000 patients per year in the US, and you can easily se that translates to hundreds of thousands of patients worldwide."

Dr Avel Grother

throughout the world," commented

ASCO expert Nancy Bax.c.. MD, who is from St Michael's Hospital in roronto, Ontario, Canada. "Now, today, up to 65% of my patients with stage III colon cancer will be able to stop after 3 months of therapy and be able to get on with heir lives and have a lower risk of permanent problems, such as numbness of their hands and feet. Less is more, she said



Dr Nancy Baxter

Mediscape Coverage from the American Society of Clinical Oncology (ASCO) 2017 Annual Meeting

Good IDEA: Drop Adjuvant Chemo From 6 to 3 Months in CRC

John L. Marshall, MD

New standard of care: 3 months of CAPOX chemotherapy for most of your stage III patients. Only in those at higher risk should you consider going to 6 months. In those, I would say use only fluoropyrimidine

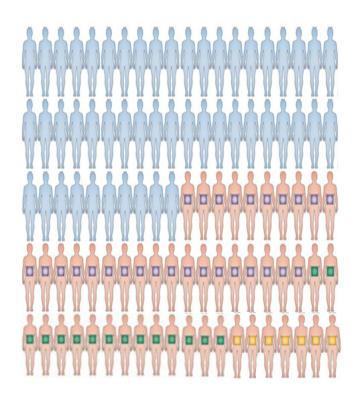


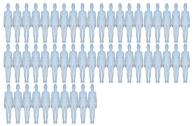
DURATION OF THERAPY — The optimal duration of adjuvant chemotherapy for patients with stage III colon cancer is evolving.... we continue to suggest six months of oxaliplatin-based therapy for individuals with high-risk cancers (T4, N2) ...On the other hand, given the small predicted loss of disease-free survival (DFS) benefit (absolute difference 0.9 percent at three years) and the significantly lower rates of oxaliplatin neuropathy, it seems reasonable to limit adjuvant therapy to three months in patients with low-risk disease (T1-3,N1), which makes up approximately 60 percent of all stage III colon cancers. However, the data from the IDEA collaboration are preliminary, and overall survival results are not yet mature....

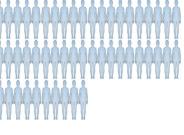
BACKGROUND AND RATIONALE



Stage III colon cancer



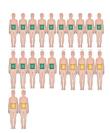














BACKGROUND AND RATIONALE



- Can we reduce the duration of oxaliplatin-based adjuvant chemotherapy in stage III CRC:
 - In order to reduce both short and long term toxicities?
 - Without impairing the DFS benefit that 22% of stage III CRC receives from this treatment?

Is 3 months oxaliplatin-based adjuvant chemotherapy not worse than 6 months therapy?

INTERNATIONAL <u>D</u>URATION <u>E</u>VALUATION OF <u>A</u>DJUVANT CHEMOTHERAPY (IDEA) COLLABORATION

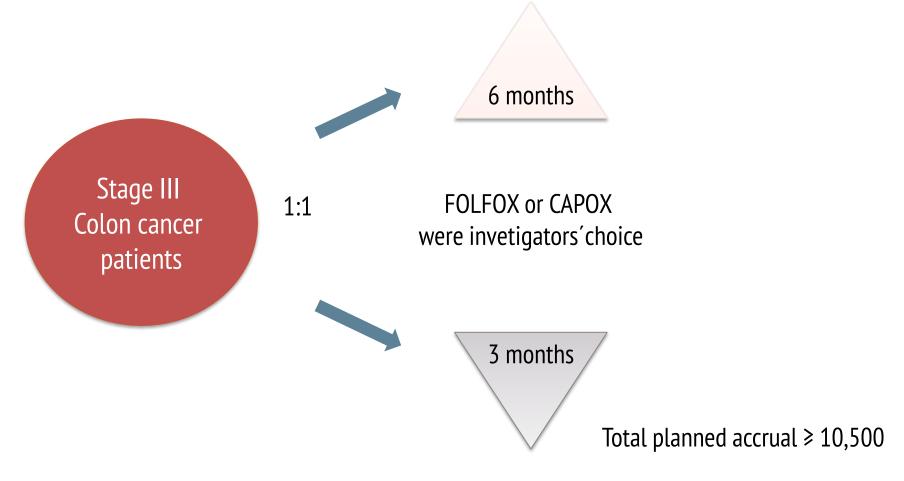


 Prospective pooled analysis of six independent randomized phase III trials (12 countries) investigating the duration of adjuvant chemotherapy, 6 versus 3 months, in early stage CRC patients

Trial	SCOT	Alliance/ SWOG 80702	TOSCA	IDEA France	ACHIEVE	HORG
Regimen	CAPOX or mFOLFOX6	mFOLFOX6	CAPOX or FOLFOX4	CAPOX or mFOLFOX6	CAPOX or mFOLFOX6	CAPOX or FOLFOX4
N of pts enrolled	3983	2440	2402	2010	1291	708
Countries	UK Denmark Spain Australia Sweden New Zeland	US, Canada	Italy	France	Japan	Greece

STUDY DESIGN





STUDY OBJECTIVES



- Primary endpoint
 - Disease Free survival (DFS)
- Primary analyisis Population:
 - Modified Intent-to-Treat
- DFS Hazard ratio (HR 3m vs 6 m) and two-sided 95% Confidence Interval (CI) were estimated by Cox model stratified by study
- Pre-planned subgroup analyses:
 - By regimen and T/N stage

RATIONALE FOR NON-INFERIORITY MARGIN



Historical data from MOSAIC

5FU/LV + Oxaliplatin vs 5-FU/LV

24% relative risk reduction

IDEA consensus

Oxaliplatin-based treatment: 3m vs 6 m

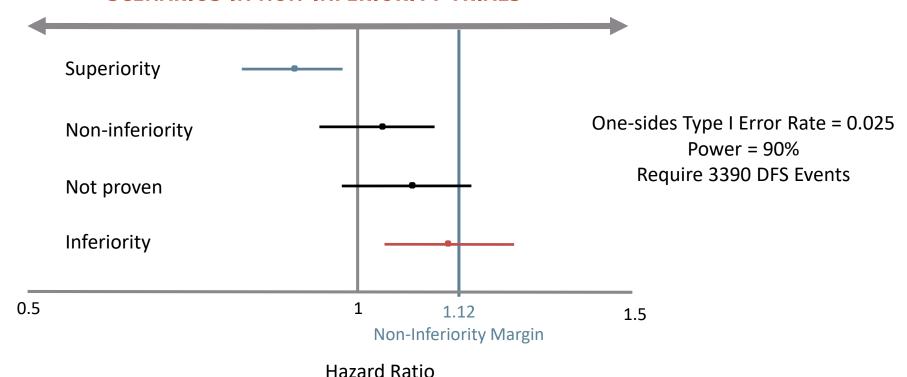
<12% relative risk increase (upper 95%CI) of relapse to be sufficient to show the NI of 3m vs 6 m

Non-inferiority Margin: DFS HR = 1.12

NON-INFERIORITY HYPOTHESIS TESTING



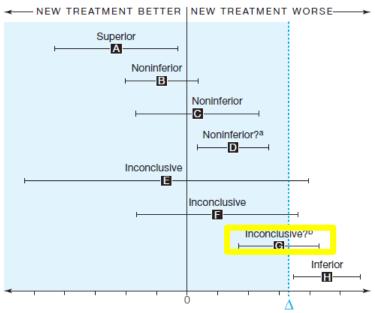
STATISTICAL CONCLUSIONS UNDER DIFFERENT SCENARIOS IN NON-INFERIORITY TRIALS



Piaggio et al. Jama 2006 and 2012

POSSIBLE SCENARIOS OF OBSERVED TREATMENT DIFFERENCES FOR ADVERSE OUTCOMES(HARMS) IN NONINFERIORITY TRIALS





Treatment Difference for Adverse Outcome (New Treatment Minus Reference Treatment)

Error bars indicate 2-sided 95% CIs. The blue dashed line at $x=\Delta$ indicates the noninferiority margin; the blue tinted region to the left of $x=\Delta$ indicates the zone of inferiority. A, If the CI lies wholly to the left of zero, the new treatment is superior. B and C, If the CI lies to the left of Δ and includes zero, the new treatment is noninferior but not shown to be superior. D, If the CI lies wholly to the left of Δ and wholly to the right of zero, the new treatment is noninferior in the sense already defined but also inferior in the sense that a null treatment difference is excluded. This puzzling circumstance is rare, because it requires a very large sample size. It also can result from a noninferiority margin that is too wide. E and F, If the CI includes Δ and zero, the difference is nonsignificant but the result regarding noninferiority is inconclusive. G, If the CI includes Δ and is wholly to the right of zero, the difference is statistically significant but the result is inconclusive regarding possible inferiority of magnitude Δ or worse. H, If the CI is wholly above Δ , the new treatment is inferior.

^aThis CI indicates noninferiority in the sense that it does not include Δ , but the new treatment is significantly

^bThis CI is inconclusive in that it is still plausible that the true treatment difference is less than Δ , but the new treatment is significantly worse than the standard. Adapted from Piaggio et al.⁶

IDEA TRIALS: MAIN CHARACTERISTICS



15

Trial	Regimen(s)	Stage	T4 (within stage III)	Tumor Location	% CAPOX
TOSCA	CAPOX or FOLFOX4	II, III	12%	Colon	35
SCOT	CAPOX or mFOLFOX6	II, III	29%	Colon, Rectum	67
IDEA France	CAPOX or mFOLFOX6	III	18%	Colon	10
C80702	mFOLFOX6	III	15%	Colon	0
HORG	CAPOX or FOLFOX4	II, III	14%	Colon	58
ACHIEVE	CAPOX or mFOLFOX6	III	28%	Colon	75

Modified from Shi Q, ASCO 2017

PATIENTS CHARACTERISTICS



FOLFOX

CAPOX

Patient characteristics	3m (n=3870)	6m (n=3893)	3m (n=2554)	6m (n=2517)
Median Agne, years	64	64	65	65
ECOG PS* 0 1	77% 22%	77% 22%	82% 18%	81% 19%
T stage T1-2 T3 T4	13% 68% 19%	14% 67% 19%	13% 63% 24%	12% 63% 25%
N Stage N1 N2	72% 28%	73% 27%	71% 29%	71% 29%

TOXICITY



FOLFOX

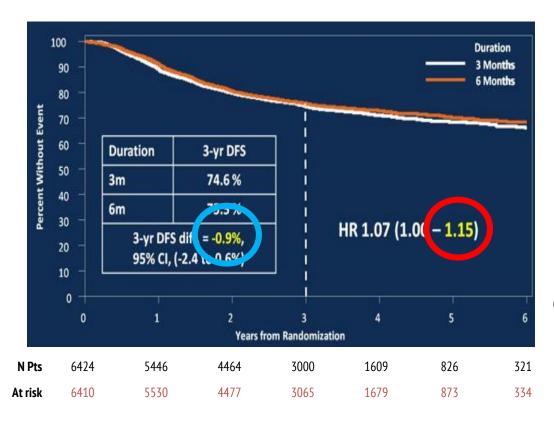
CAPOX

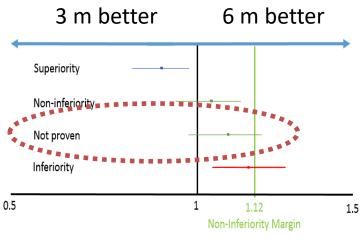
Adverse events	3m	6m	p-value ¹	3m	6m	p-value ¹
Overall G2 G3-4	32% 38%	32% 57%	<0.0001	41% 24%	48% 37%	<0.0001
Neurotoxocity G2 G3-4	14% 3%	32% 16%	<0.0001	12% 3%	36% 9%	<0.0001
Diarrhea G2 G3-4	11% 5%	13% 7%	<0.0001	10% 7%	13% 9%	0.0117

¹ Chi-squared test for trend; Total of 19 grade 5 events; Adverse events only collected on first 617 pts from SCOT trial

PRIMARY DFS ANALYSIS (mITT)







Hazard Ratio

PRE-PLANNED ANALYSIS: DSF COMPARISON BY STAGE

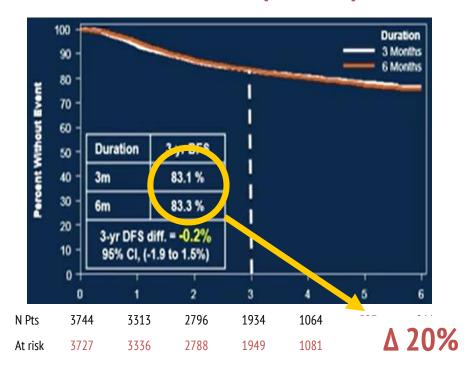


	-			3m better ◄───	6m better	Interaction p-value
	Pts 3m	Pts 6m	HR (3m/6m)			
N stage						
N1	4583	4585	1.07	-		0.44
N2	1798	1769	1.07	-	-	0.77
T stage						
T1/2	849	841	1.07		 • 	
T3	4219	4181	1.04	_	8	0.36
T4	1320	1335	1.16		-	
				0.5	1 1.12	- 1.5
					d Ratio	

DFS BY STAGE



T1-3 N1 (25.7%)



T4 or N2 (41.3%)



DSF COMPARISON BY RISK GROUPS

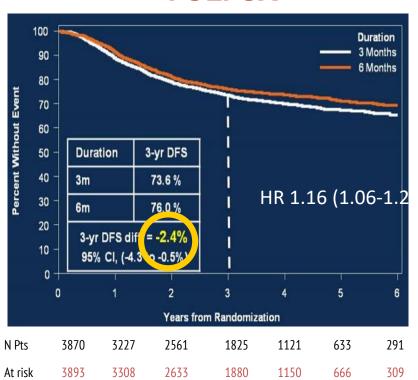


	Pts 3m	Pts 6	m HR (3m	/6m) 3n	n better 6	6m better Interaction
N stage						p-value
N1	4583	4585	1.07		+	<u> </u>
N2	1798	1769	1.07		+	0.44
T stage						
T1/2	849	841	1.07			0.36
T3	4219	4181	1.04		-	0.50
T4	1320	1335	1.16			•
	Risk Group T1-3 N1	3744	3727	1.01		Non inferior*
						0.11
	T4 or N2	2634	2622	1.12		Inferior*
				0.5	1 1	.12 1.5
					HR	

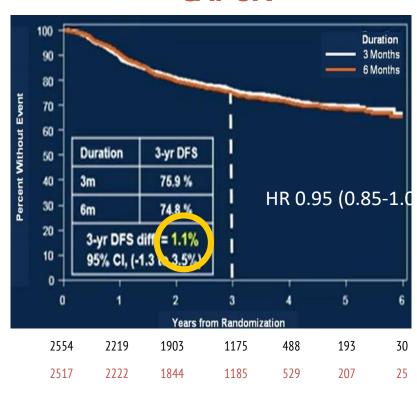
PRE-PLANNED ANALYSIS: DSF COMPARISON BY REGIMEN



FOLFOX



CAPOX



Interaction p-value = 0.0051

DIFFERENT RESULTS IN RFS/DFS IN THE OVERALL POPULATION FOR THE TRIALS PRESENTED AT ASCO



Trials	3m	6m	HR	3 yrs DFS Δ	Non Inferiority
SCOT	76.7%	77.1%	1.006 (0.909-1.114)	-0.4%	Proven (upper margin 1.13)
TOSCA	81.1%	83%	1.14 (0.99-1.32)	-1.9%	Not proven (upper margin > 1.2)
IDEA France	72%	76%	1.24 (1.05-1.46)	4%	Inferiority

Nevertheless.....

DFS COMPARISON BY REGIMEN ACROSS THE DIFFERENT TRIALS

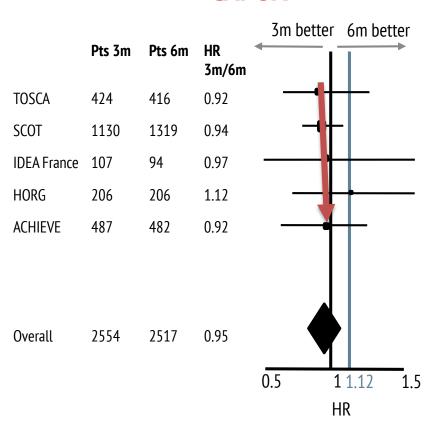
1.5



FOLFOX

3m better 6m better Pts 3m Pts 6m 3m/6m **TOSCA** 1.14 770 792 **SCOT** 662 672 1.71 **IDFA** France 895 914 1.27 **HORG** 0.87 148 148 **ACHIEVE** 1.08 163 159 C8072 1232 1.10 1208 3870 3893 1.16 Overall 0.5 1 1.12 HR

CAPOX



IS THE REGIMEN'S CHOICE IMPORTANT?



YES

- More continuous 5FU infusion seems to be better (Twelves et al, 2005; Chau et al, 2005)
- The dose of oxaliplatin in the first 4 weeks of CAPOX is 260 mg/m², while for FOLFOX is 170 mg/m²
- Compliance and overall dose intensity better

TREATMENT COMPLIANCE IN IDEA



CAPOX

Treatment compliance	3m	6m	3m	6m		
Total no. weeks received treatment Median (Q1-Q3)	12 (12-12)	24 (20-24)	12 (12-12)	24(18-24)		
Reached the planned last cycle ¹	90%	71%	86%	65%	FOLFOX	
% of dose actually delivered, Mean (SD)					САРОХ	3m-6m
5FU ²	92.4 (22.7)	81.6 (26.6)			5FU	Δ12%
Capecitabine			91.2 23.5)	78 (29.4)		
Oxaliplatin	91.4 19.9)	<mark>72.8</mark> (25.6)	89.8 21.7)	69.3 (28.3)	Oxaliplatin	Δ 20%

FOLFOX

¹1% of pts of the 3m arm (both FOLFOX and CAPOX) received >3m of treatment; ² both infusion and bolus

TREATMENT COOMPLIANCE IN IDEA



	F	OLFOX	CAP	OX
Treatment compliance Oxaliplatin dose	3m 510mg/m ²	6m 1020 mg/m ²	3m 520mg/m ² 1040mg/m ²	6m
n. of planned cycles	6	12	4	8
% of dose actually delivered, Mean (SD)				
5FU ²	92.4 (22.7)	81.6 (26.6)		
Capecitabine			91.2 (23.5)	<mark>78</mark> (29.4)
Oxaliplatin	91.4 (19.9) 466 mg/m ² 5.5 cycles	72.8 (25.6) 742 mg/m ² 8.7 cycles	89.8 (21.7) 466 mg/m ² 3.5 cycles	69.3 (28.3) 720mg/m ² 5.5 cycles
DFS low risk DFS high risk	81.9% 61.5%	83.5% 64.7%	85% 64.1%	83.1% 64%

IS THE REGIMEN'S CHOICE IMPORTANT?



YES

More continuous 5FU infusion

seems to be better (Twelves et

al, 2005; Chau et al, 2005)

- No
- The dose of oxaliplatin in the first 4 weeks of CAPOX is 260 mg/m², while for FOLFOX is 170 mg/m²
- Compliance and overall dose intensity better

NO

 No differences in metastatic setting (Cassidy et al, 2011)

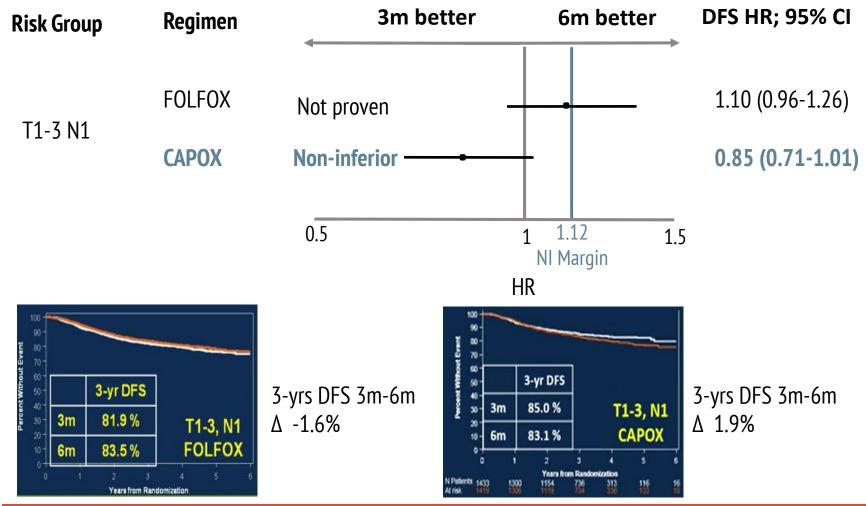


Please consider also the example of FOLFIRI efficacy in metastatic vs adjuvant setting!

 Bias by indication: factors for favourable outcome for patient who got CAPOX

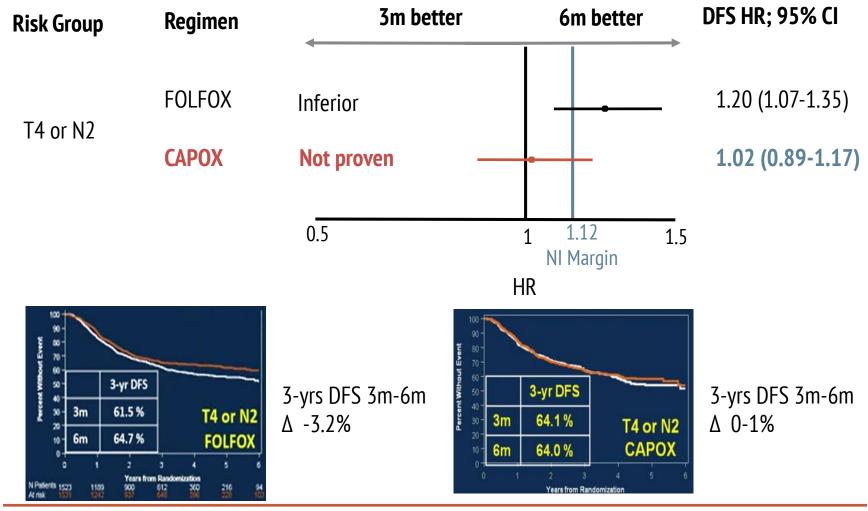
DFS COMPARISON BY RISK GROUP AND REGIMEN





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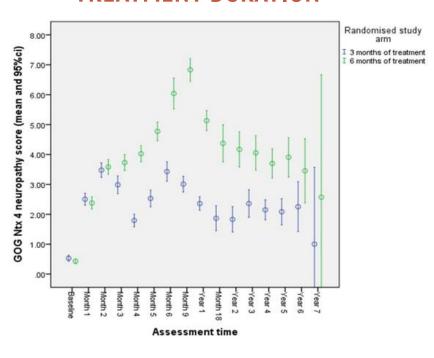


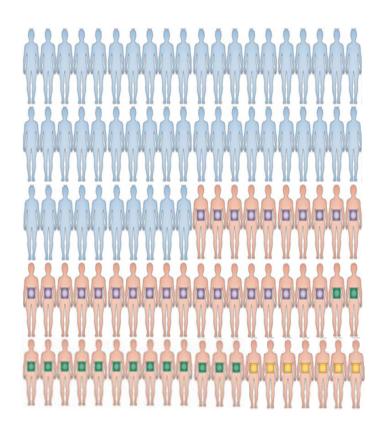


PRE-CONCLUSION



NEUROPATHY MEASURED BY PATIENT QUESTIONNAIRE OVER TIME BY TREATMENT DURATION



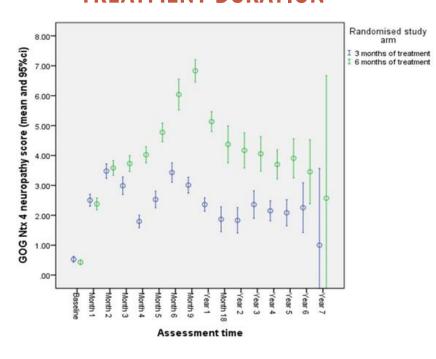


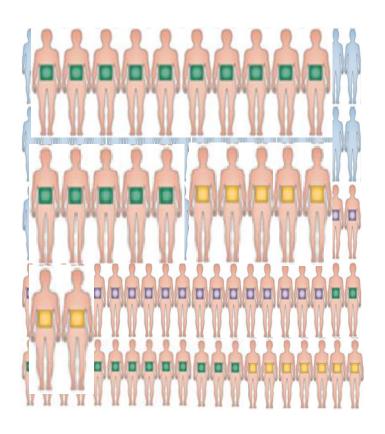
Iveson et al. ASCO 2017

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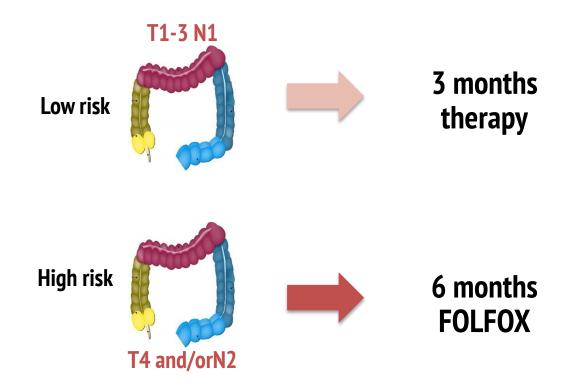
Conclusions



- 3m treatment showed higher treatment compliance and lower G2+ neurotoxicity compared to 6m treatment
- Non- inferiority for DFS was not proven in overall stage III colon cancer
- Large difference in overall prognosis between low risk (T1-3 N1) and high risk (T4 or N2): 3 yrs DFS $\Delta 20\%$
- Results comparing DFS between 3m and 6m treatment depend on risk groups and regimen
- In particular, for low risk group 3m CAPOX is non inferior (NOT WORSE) to 6m and in high risk group 3m are not proven to be inferior as compared to 6m
- OS data are needed to show the robusteness of the results, nevertheless DFS has been proven to be a good predictor of 5yrs OS

HOW WILL I TREAT MY NEXT STAGE III COLON CANCER PATIENT?





3 MONTHS OF ADJUVANT TREATMENT

ARE WE READY FOR IT?

Dominik Modest

Medical Oncologist
Medical Dept III, University of Munich (LMU)
Comprehensive Cancer Center Munich, Munich



ASCO DAILY NEWS



Risk-Based Approach to Chemotherapy Duration Recommended for Stage III Colon Cancer

In view of these findings, investigators in the IDEA collaboration reached a clinical consensus to recommend a risk based approach to selecting adjuvant chemotherapy for stage III colon cancer. The consensus recommends 3

months of adjuvant chemotherapy for patients with low-risk disease, defined as T1-3N1 tumors, which includes approximately 60% of stage III patients. For high-risk patients, defined as patients with T4 or N2 tumors, decisions on use of the shorter course should be based on an individual assessment of tolerability, risk, and choice of regimen.

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ASCO expert Nancy Baxter, MD, who is from St Michael's Hospital in Toronto, Ontario, Canada. "Now, today, up to 60% of my patients with stage III colon cancer will be able to stop after 3 months of therapy and be able to get on with their lives and have a lower risk of permanent problems, such as numbness of their hands and feet. Less is more,"



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Sobrero A, ASCO 2017

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PIs of studies or IDEA consortium.



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results of TOSCA, SCOT, IDEA France, and other IDEA trials, Dr. Meyerhardt plans to offer 6 months of FOLFOX to his patients with T4 or N2 disease. For those with T1-3N1 disease, he will offer 3 months of CAPOX or FOLFOX to reduce toxicity and alleviate the logistical burden of treatment; he cited his preference for CAPOX because of its slightly more preferable efficacy data.

Meyerhardt J, ASCO 2017

HOW DO WE DEAL WITH FRESH STUDY DATA?



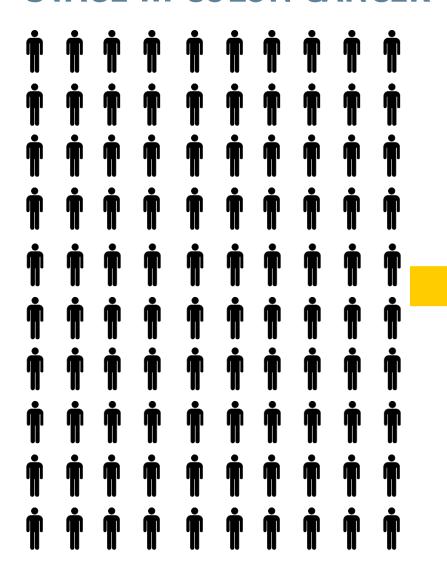
Three questions should be asked in general:

Is the data:

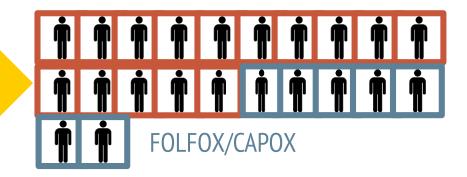
- True?
- New?
- Does it matter?

STAGE III COLON CANCER





Cured because they got adjuvant therapy after surgery

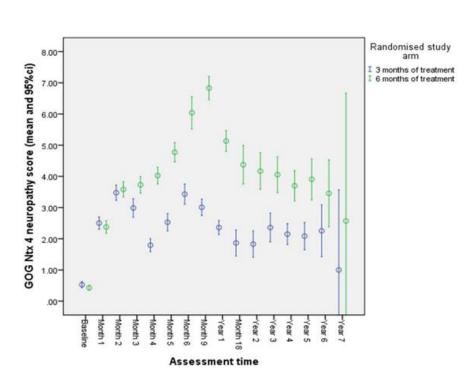


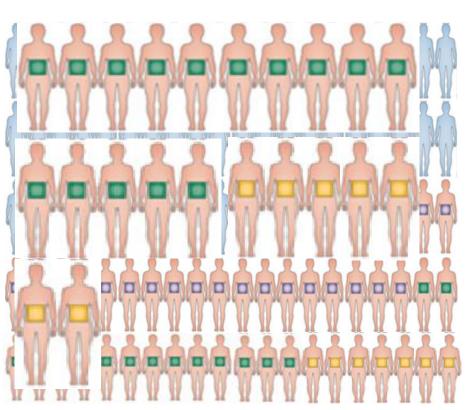
Only ones that benefit from chemo (as measured by cure)

PRE-CONCLUSION



NEUROPATHY MEASURED BY PATIENT QUESTIONNAIRE OVER TIME BY TREATMENT DURATION





Iveson et al ASCO 2017

BACKGROUND OF IDEA



With 6 mo Ox-based chemo, we cure a minority and harm a majority

Aiming to reduce toxicity and maintain the benefit is important

It applies to large no. of patients worldwide

This is highly relevant

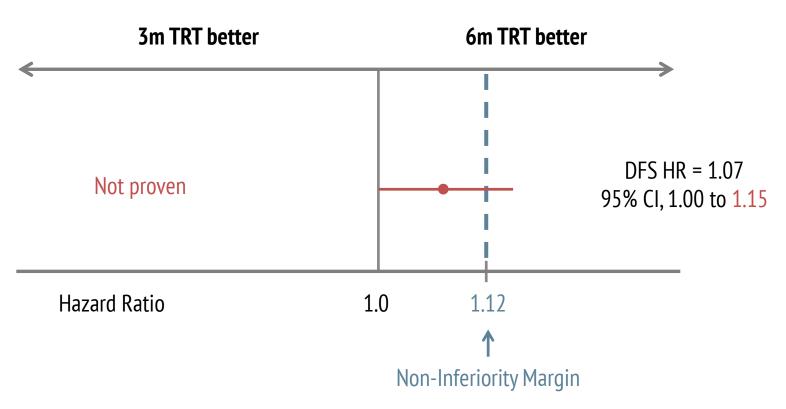
The question is unanswered and therefore, new

WHAT ARE THE MAIN CONCLUSIONS? ARE THEY TRUE?

PRIMARY DFS ANALYSIS (mITT), CONT.



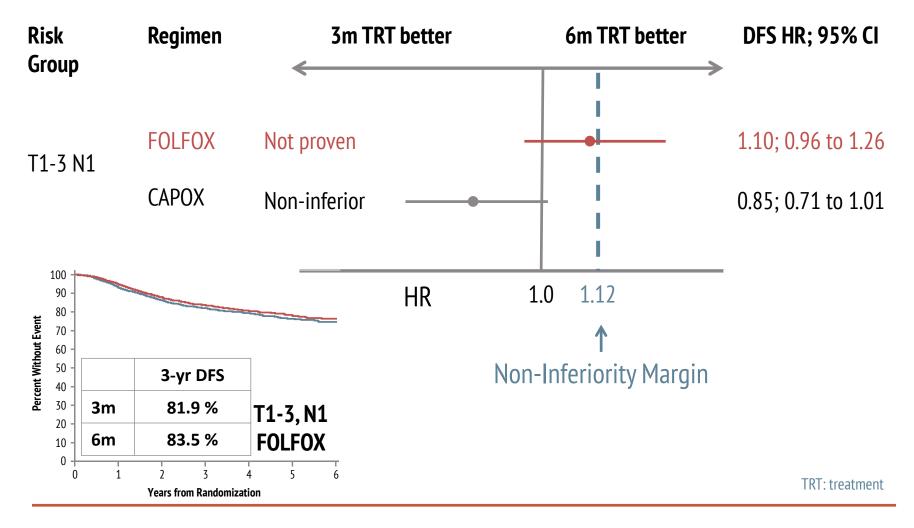
STATISTICAL CONCLUSIONS



TRT: treatment

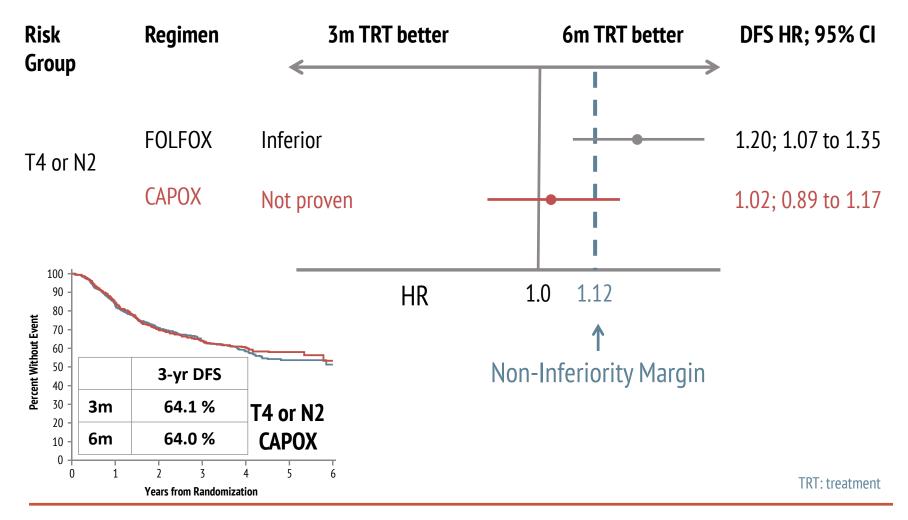
DFS COMPARISON BY RISK GROUP AND REGIMEN





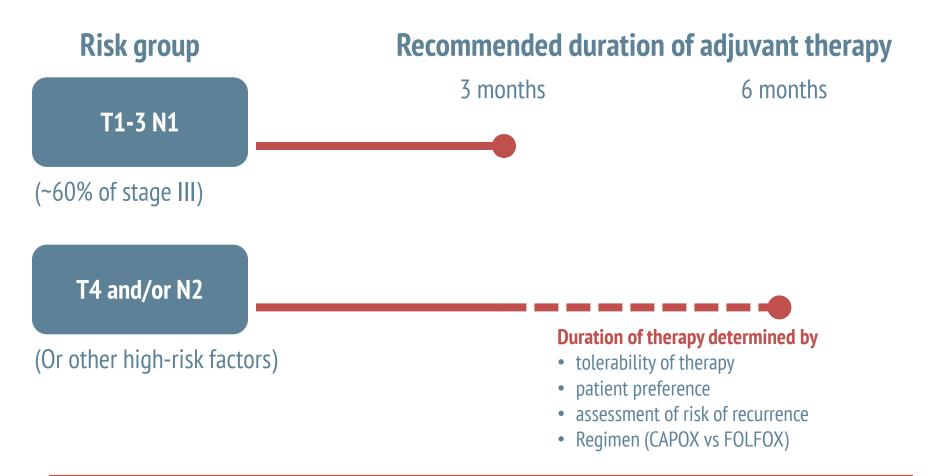
DFS COMPARISON BY RISK GROUP AND REGIMEN, CONT.





IDEA CLINICAL CONSENSUS: RISK-BASED APPROACH TO ADJUVANT CHEMOTHERAPY IN STAGE III COLON CANCER





CENTRAL STATEMENT @ASCO



- My next patient who has T4 or N2 disease, I will offer 6 months FOLFOX
- My next patient who has T1-3, N1 disease, I will discuss differences in toxicities and logistics of CAPOX or FOLFOX. I will offer 3 months CAPOX or FOLFOX and explain I am more confident in the data for CAPOX

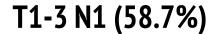
SUMMARY & BASIC INTERPRETATION OF IDEA

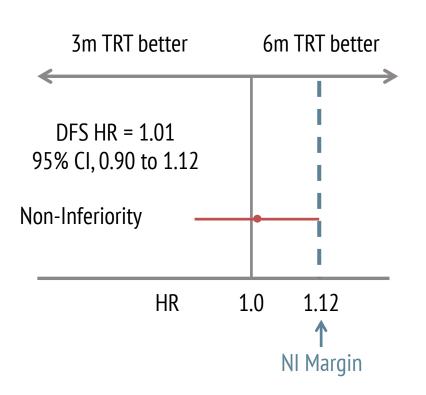


- This is a negative trial
- Overall analysis (DFS): 6mo rather superior (borderline-sign.)
 than 3mo non-inf.
- Two subgroups are defined: low risk T3/N1 and CAPOX
- T3/N1-story only "true" with CAPOX?
- T4/N2 clearly not non-inf.

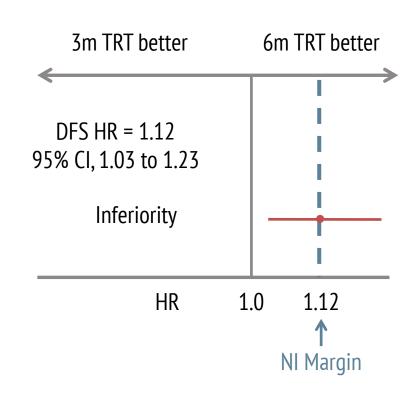
DFS COMPARISON BY RISK GROUPS, CONT.







T4 or N2 (41.3%)



Interaction p-value = 0.11

TRT: treatment

STAGE DEPENDING EFFECT T3/ N1 VS T4/N2 ?



IS THIS TRUE?

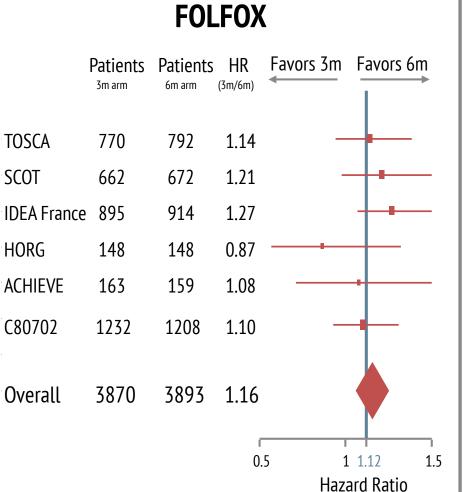
No interaction of stage and treatment can be proven based on the whole IDEA consortium of >12.000 pts.

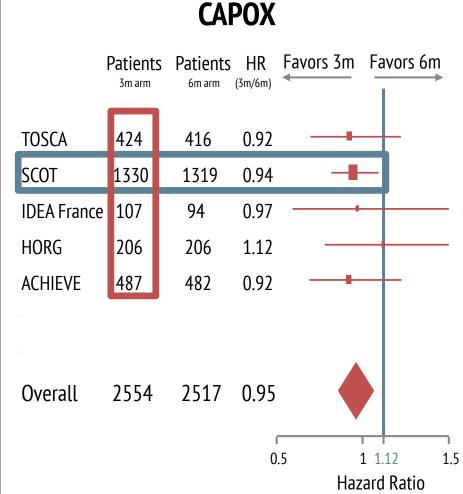
Without clear interaction, we should be very careful

- To declare differences in outcome based on TX and stage
- To define differing treatment choices

DFS COMPARISON BY REGIMEN, CONT.



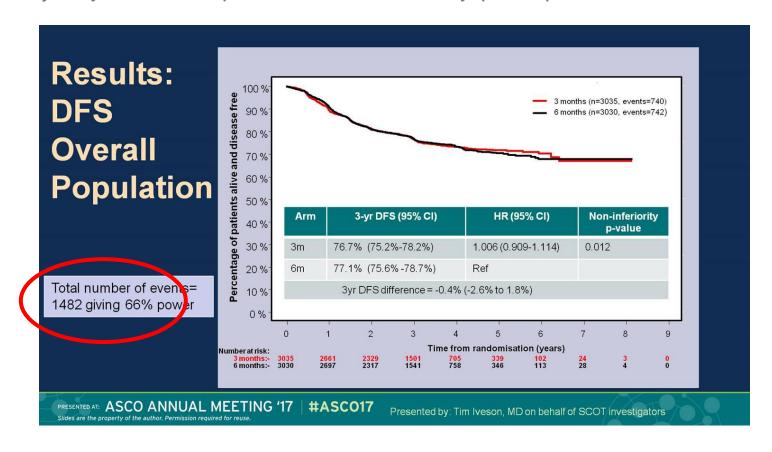




IS THE CAPOX EFFECT RELEVANT/TRUE?



Majority of CAPOX pts from on one study (SCOT), > 56%!



CAPOX...



It could be true, but is maybe biased by:

- No randomisation/ bias of prognosis
- One study with event rate of <25% (SCOT)

My interpretation:

If you go for CAPOX, you may stop at 3 months-but:

Is this equal to: you should go for CAPOX at T3/N1??

SUMMARY 1



- IDEA did not show non-inferiority of 3mo, rather superiority of standard (6mo) based on a sample size of >12.000 pts
- Conflicting results of three single studies with differences in design
- The subset of T3/N1 and T4/N2 did not show a significant interaction
 - Is it reasonable to base recommendations based on this finding?
- CAPOX appeared to do better that FOLFOX
 - 56% of CAPOX data originate from SCOT, a study with 66% Power and 24% events

SUMMARY 2



We promote adjuvant treatment to save lives. Have you seen overall survival data?

→ There are no overall survival data!

The IDEA data are not robust enough to define a new standard, yet.

CONCLUSION



The data are new and relevant

True? Maybe

Is it already time to define a new standard? No



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