

Supplementary Table 1 South west oncology group toxic grading score

Score	0	1	2	3	4
Fever	None	37.1-38.0 °C	38.1-40.0 °C	> 40.0 °C	> 40.0 °C for more than 24 h or accompanied by hypotension
Nausea	None	Able to eat reasonable intake	Intake significantly decreased, but can eat	No significant intake	-
Vomiting	None	1 episodes in 24 h	2-5 episodes in 24 h	6-10 episodes in 24 h	> 10 episodes in 24 h or requiring parenteral support
Abdominal pain	None	Requiring non- narcotics	Requiring oral narcotics	Requiring parenteral narcotics	Uncontrollable

Supplementary Table 2 Common Toxicity Criteria Adverse Event (CTCAE version 5)

	Grade 1	Grade 2	Grade 3	Grade 4
Fever	38.0-39.0 °C	> 39.0-40.0 °C	> 40.0 °C for < 24 h	> 40.0 °C for > 24 h
Nausea	Loss of appetite without alteration in eating habits	Oral intake decreased without significant weight loss, dehydration or malnutrition	Inadequate oral or fluid intake; tube feeding, TPN, or hospitalization indicated	-
Vomiting	1-2 episodes (separated by 5 min) in 24 h. Intervention not indicated	3-5 episodes (separated by 5 min) in 24 h. Medical intervention indicated	> 6 episodes (separated by 5 min) in 24 h; tube feeding, TPN or hospitalization indicated	Life-threatening consequences; urgent intervention indicated
Abdominal pain	Mild pain	Moderate pain; limiting instrumental ADL	Severe pain; limiting self care ADL	-
AST	> ULN-3.0 × ULN	> 3.0-5.0 × ULN	> 5.0-20.0 × ULN	> 20.0 × ULN
ALT	> ULN-3.0 × ULN	> 3.0-5.0 × ULN	> 5.0-20.0 × ULN	> 20.0 × ULN
ALP	> ULN-2.5 × ULN if baseline was normal	> 2.5-5.0 × ULN if baseline was normal	> 5.0-20.0 × ULN if baseline was normal	> 20.0 × ULN if baseline was normal
	2.0-2.5 × baseline if baseline was abnormal	> 2.5-5.0 × baseline if baseline was abnormal	> 5.0-20.0 × baseline if baseline was abnormal	> 20.0 × baseline if baseline was abnormal
Total bilirubin	> ULN-1.5 × ULN if baseline was normal	> 1.5-3.0 × ULN if baseline was normal	> 3.0-10.0 × ULN if baseline was normal	> 10.0 × ULN if baseline was normal

	> 1.5-2.5 × baseline if baseline was abnormal	> 2.5-3.0 × baseline if baseline was abnormal	> 3.0-10.0 × baseline if baseline was abnormal	> 10.0 × baseline if baseline was abnormal
Hyperglycemia	FPG > ULN-160 mg/dL	FPG > 160-250 mg/dL	FPG > 250-500 mg/dL	FPG > 500 mg/dL
	Abnormal glucose above baseline with no medical intervention	Change in daily management from BL for a diabetic; oral antiglycemic agent initiated	Insulin therapy initiated; hospitalization indicated	Life-threatening consequences; urgent intervention indicated

ADL: Activities of daily living; ALP: Alkaline phosphatase; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; ULN: Upper limit of normal.

Supplementary Table 3 Liver function test after transarterial chemoembolization, *n* (%)

	NAC + DEXA	Placebo	<i>P</i> value
AST change from BL (24 h)			
Grade 1	18 (36%)	14 (28%)	0.57
Grade 2	10 (20%)	11 (22%)	
Grade 3	5 (10%)	9 (18%)	
Grade 4	7 (14%)	10 (20%)	
AST change from BL (48 h)			
Grade 1	22 (44%)	24 (48%)	0.32
Grade 2	8 (16%)	4 (8%)	
Grade 3	4 (8%)	9 (18%)	
Grade 4	6 (12%)	9 (18%)	
ALT change from BL (24 h)			
Grade 1	22 (44%)	18 (36%)	0.50
Grade 2	4 (8%)	6 (12%)	
Grade 3	7 (14%)	13 (26%)	
Grade 4	3 (6%)	3 (6%)	
ALT change from BL (48 h)			
Grade 1	19 (38%)	16 (32%)	0.35
Grade 2	7 (14%)	7 (14%)	
Grade 3	7 (14%)	15 (30%)	
Grade 4	2 (4%)	1 (2%)	
ALP change from BL (48 h)			
Grade 1	9 (18%)	13 (26%)	0.80
Grade 2	1 (2%)	1 (2%)	
Total bilirubin change from BL (24 h)			
Grade 1	15 (30%)	25 (50%)	0.19
Grade 2	0	2 (4%)	
Grade 3	0	4 (8%)	

Total bilirubin change from BL (48 h)

Grade 1	1 (2%)	0	
Grade 2	19 (38%)	13 (26%)	0.006
Grade 3	9 (18%)	23 (46%)	
Grade 4	0	6 (12%)	

ALP: Alkaline phosphatase; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; BL: Baseline; DEXA: Dexamethasone; NAC: N-acetylcysteine.

Supplementary Figure 1 Randomized strategy and intervention

