

Public Health Symposium

公众健康教育研讨会



Current Topics on

Cancer Adjuvant Medication

Roles of Herbal Medicines

Promoting the Nutriceutical Science of Preventive Self-care



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Organ system	Toxic side effects
Cardiotoxicity (Heart)	hypotension, hypertension, arrhythmias, myocardial infarction, congestive cardiac failure, cardiomyopathy, myocarditis, and pericarditis,
Gastrointestinal toxicity	nausea and vomiting; diarrhea
Hepatotoxicity (Liver)	necrosis, steatosis, fibrosis, cholestasis
Nephrotoxicity (Kidney)	acute or chronic renal failure; long-term higher incidence of hypertension
Neurotoxic (Nerves)	peripheral neuropathy, muscle pain, cranial neuropathy, and seizures
Pulmonary toxicity (Respiratory)	dry cough, Pneumonitis, pulmonary fibrosis



Chinese Herbal Medicine as an Adjunctive Therapy for Cancer Treatment



Improve Quality of Life

	Experim	ental	Contr	ol		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	I M-H, Fixed, 95% CI
Li et al 2009	26	42	7	41	24.7%	3.63 [1.77, 7.41]	-
Sun 2011	5	30	4	29	14.2%	1.21 [0.36, 4.06]	_
Xu et al 2007	13	60	5	56	18.0%	2.43 [0.92, 6.37]	T-
Yao et al 2011	29	43	3	43	10.4%	9.67 [3.18, 29.36]	-
Zhang et al 2012	9	63	6	56	22.1%	1.33 [0.51, 3.51]	-
Zhu et al 2011	13	32	3	31	10.6%	4.20 [1.32, 13.31]	-
Total (95% CI)		270		256	100.0%	3.25 [2.22, 4.77]	•
Total events	95		28				
Heterogeneity: Chi ² =	10.15, df =	5 (P = 0	.07); 2 =	51%			0.004 0.4 1 10 1000
Test for overall effect:	Z = 6.04 (P	< 0.000	001)				0.001 0.1 1 10 1000 Favours CT Favours CTC

Figure: Quality of life. The quality of life changes on Karnofsky performance scale (KPS) were estimated from meta-analysis of pairwise comparisons in patients with Chinese herbal medicine (CTC, treatment group) versus patients in chemotherapy (CT, control group). KPS improvement (the increase of KPS >= 10)

The Efficacy of Chinese Herbal Medicine as an Adjunctive Therapy for Advanced Non-small Cell Lung Cancer: A Systematic Review and Meta-analysis .

PLoS ONE 8(2): e57604. doi:10.1371/journal.pone.0057604



Chinese Herbal Medicine as an Adjunctive Therapy for Cancer Treatment



Improve Tumor Regression

	Experim	ental	Contr	ol		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	M-H, Fixed, 95% CI
Chen et al 2008	24	51	16	49	7.2%	1.44 [0.88, 2.37]	-
Deng et al 2012	10	28	7	30	3.0%	1.53 [0.68, 3.47]	
Huang et al 2011	8	29	5	28	2.2%	1.54 [0.57, 4.15]	
Huang et al 2012	6	29	8	28	3.6%	0.72 [0.29, 1.82]	
Li et al 2003	7	40	5	40	2.2%	1.40 [0.48, 4.04]	
Li et al 2009	26	42	16	41	7.1%	1.59 [1.01, 2.49]	-
Lin 2008	42	58	28	57	12.4%	1.47 [1.08, 2.01]	-
Lin and Zheng 2011	7	30	5	30	2.2%	1.40 [0.50, 3.92]	
Lu and Wei 2009	16	30	13	30	5.7%	1.23 [0.73, 2.09]	+
Sun 2011	13	30	10	29	4.5%	1.26 [0.66, 2.40]	+
Xu et al 2007	17	60	11	56	5.0%	1.44 [0.74, 2.81]	 -
Yang 2007	9	32	9	34	3.8%	1.06 [0.48, 2.34]	+
Zhang et al 2008	23	51	19	55	8.0%	1.31 [0.81, 2.10]	 -
Zhang et al 2012	20	63	11	56	5.1%	1.62 [0.85, 3.07]	 -
Zheng et al 2010	15	30	14	30	6.1%	1.07 [0.63, 1.81]	+
Zhou et al 2005	27	103	13	92	6.0%	1.86 [1.02, 3.38]	-
Zhou et al 2012	4	25	1	25	0.4%	4.00 [0.48, 33.33]	
Zhu and Guo 2011	41	92	35	90	15.5%	1.15 [0.81, 1.62]	*
Total (95% CI)		823		800	100.0%	1.36 [1.19, 1.56]	\
Total events	315		226				
Heterogeneity: Chi ² = 1	7.39, df = 1	7(P = 0)	.98); I ² =	0%			0.005
Test for overall effect:							0.005

Figure: Immediate tumor responses. Immediate tumor responses estimated from metaanalysis of pairwise comparisons in patients with chemotherapy combined Chinese herbal medicine (CTC, treatment group) versus patients in chemotherapy (CT, control group).



A. Nausea and vomiting at toxicity grade of III~IV

	Experime	ental	Contr	ol		Risk Ratio		Risk	Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	1	M-H, Fixe	ed, 95% CI	
Huang et al 2011	0	29	0	28		Not estimable				
Huang et al 2012	3	28	7	29	20.9%	0.44 [0.13, 1.55]		_		
Lu and Wei 2009	2	30	6	30	18.2%	0.33 [0.07, 1.52]		-	-	
Xu et al 2007	1	60	3	56	9.4%	0.31 [0.03, 2.90]	-	_		
Zheng et al 2010	2	30	17	30	51.5%	0.12 [0.03, 0.47]	-			
Total (95% CI)		177		173	100.0%	0.24 [0.12, 0.50]		•		
Total events	8		33							
Heterogeneity: Chi ² = 2	2.18, df = 3	(P = 0.5)	54); $I^2 = 0$	%			0.01		1 10	100
Test for overall effect:	Z = 3.81 (P	= 0.000	01)			Fa	0.01 avours	0.1 experimental	1 10 Favours con	100 itrol

B. Hemoglobin decline at the toxicity grade of I~IV

	Experim	ental	Contr	ol		Risk Ratio	Risl	k Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fix	ked, 95% CI	
Huang et al 2011	11	29	13	28	11.5%	0.82 [0.44, 1.51]	_	•	
Li and Li et al 2012	16	40	20	39	17.6%	0.78 [0.48, 1.27]	7	•	
Lu and Wei 2009	5	30	9	30	7.8%	0.56 [0.21, 1.46]	-	+	
Sun 2011	4	30	16	29	14.1%	0.24 [0.09, 0.64]	-	i	
Xu et al 2007	31	60	39	56	35.0%	0.74 [0.55, 1.00]	1	•	
Zhu and Guo 2011	8	92	16	90	14.0%	0.49 [0.22, 1.09]		†	
Total (95% CI)		281		272	100.0%	0.64 [0.51, 0.80]	•	•	
Total events	75		113						
Heterogeneity: Chi ² = 6	6.64, df = 5	(P = 0.2	25); $I^2 = 2$	5%			0.01	1 10	100
Test for overall effect:	Z = 3.96 (F	< 0.000	01)				0.01 0.1 vours experimental	1 10 Favours cont	100 trol

C. Hemoglobin decline at the toxicity grade of III~IV

	Experim	ental	Contr	ol		Risk Ratio		Risk	Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	I	M-H, Fixe	d, 95% CI	
Huang et al 2011	1	29	2	28	13.3%	0.48 [0.05, 5.03]		-	_	
Li and Li et al 2012	2	40	5	39	33.2%	0.39 [0.08, 1.89]			_	
Lu and Wei 2009	0	30	0	30		Not estimable				
Sun 2011	0	30	2	29	16.7%	0.19 [0.01, 3.87]	_	-		
Xu et al 2007	4	60	2	56	13.6%	1.87 [0.36, 9.80]		-		
Zhu and Guo 2011	1	92	1	90	6.6%	0.98 [0.06, 15.40]			-	
Zhu et al 2011	0	32	2	31	16.6%	0.19 [0.01, 3.88]	_	•		
Total (95% CI)		313		303	100.0%	0.58 [0.26, 1.29]		•		
Total events	8		14							
Heterogeneity: Chi ² =	3.35, df = 5	(P = 0.6)	65); I² = 0	%			0.004	1 1	10	1000
Test for overall effect:	Z = 1.33 (P	= 0.18))			F	0.001 avours exp	0.1 1 erimental	10 Favours c	1000 ontrol



Alleviate Drug Toxic Side effects on RBC

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A. WBC reduction at the toxicity grade of III~IV

	Experim	ental	Contr	ol		Risk Ratio	Risk Ra	atio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	M-H, Fixed	, 95% CI	
Huang et al 2011	2	29	3	28	3.2%	0.64 [0.12, 3.57]	-	_	
Huang et al 2012	2	28	3	29	3.1%	0.69 [0.12, 3.83]		_	
Li and Li et al 2012	6	40	12	39	12.9%	0.49 [0.20, 1.17]			
Lin 2008	7	58	20	57	21.4%	0.34 [0.16, 0.75]	-		
Lu and Wei 2009	3	30	6	30	6.4%	0.50 [0.14, 1.82]			
Sun 2011	0	30	1	29	1.6%	0.32 [0.01, 7.61]			
Xu et al 2007	12	60	23	56	25.2%	0.49 [0.27, 0.88]	-		
Zheng et al 2010	2	30	8	30	8.5%	0.25 [0.06, 1.08]	-		
Zhu et al 2011	0	32	16	31	17.7%	0.03 [0.00, 0.47]	-		
Total (95% CI)		337		329	100.0%	0.36 [0.26, 0.52]	•		
Total events	34		92						
Heterogeneity: Chi ² =	5.97, df = 8	(P = 0.	65); I ² = 0	%					4000
Test for overall effect:	Z = 5.58 (F	o < 0.000	001)			F	0.001 0.1 1 avours experimental F	10 avours co	1000 ntrol

B. WBC reduction at the toxicity grade of I~IV

	Experim	ental	Contr	rol		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	M-H, Fixed, 95% CI
Huang et al 2011	9	29	12	28	5.7%	0.72 [0.36, 1.44]	
Huang et al 2012	5	28	12	29	5.5%	0.43 [0.17, 1.07]	-
Li and Li et al 2012	25	40	31	39	14.6%	0.79 [0.59, 1.05]	-
Lin 2008	37	58	50	57	23.4%	0.73 [0.59, 0.90]	
Lu and Wei 2009	17	30	24	30	11.1%	0.71 [0.49, 1.02]	-
Sun 2011	5	30	13	29	6.1%	0.37 [0.15, 0.91]	
Xu et al 2007	42	60	42	56	20.2%	0.93 [0.75, 1.17]	-
Zheng et al 2010	24	30	29	30	13.5%	0.83 [0.68, 1.00]	
Total (95% CI)		305		298	100.0%	0.75 [0.67, 0.84]	•
Total events	164		213				
Heterogeneity: Chi2 =	8.72, df = 7	(P = 0.	27); I ² = 2	0%			
Test for overall effect:	Z = 4.84 (F	< 0.000	001)			Fa	0.1 0.2 0.5 1 2 5 10

C. Platelet reduction at the toxicity grade of III~IV

	Experim	ental	Conti	rol		Risk Ratio		Ris	k Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	1	M-H, Fi	xed, 95%	CI
Huang et al 2011	2	29	4	28	13.9%	0.48 [0.10, 2.43]			_	
Huang et al 2012	2	28	4	29	13.4%	0.52 [0.10, 2.61]		_	-	
Li and Li et al 2012	1	40	3	39	10.4%	0.33 [0.04, 2.99]		-	 	
Lu and Wei 2009	0	30	0	30		Not estimable				
Sun 2011	0	30	1	29	5.2%	0.32 [0.01, 7.61]			_	
Zhu and Guo 2011	4	92	14	90	48.4%	0.28 [0.10, 0.82]				
Zhu et al 2011	0	32	2	31	8.7%	0.19 [0.01, 3.88]	_			
Total (95% CI)		281		276	100.0%	0.34 [0.17, 0.68]		•		
Total events	9		28							
Heterogeneity: Chi ² =	0.71, df = 5	(P = 0.9	98); I ² = 0	1%			-		+ +	
Test for overall effect:	Z = 3.05 (F	P = 0.002	2)			F	0.001 avours ex	0.1 perimenta	1 10 I Favou	100 100 ns control

D. Platelet reduction at the toxicity grade of I~IV

	Experim	ental	Contr	ol		Risk Ratio	Risk	Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixe	d, 95% CI
Huang et al 2011	7	29	14	28	15.9%	0.48 [0.23, 1.02]	-	
Huang et al 2012	7	28	15	29	16.5%	0.48 [0.23, 1.00]	-	
Li and Li et al 2012	8	40	12	39	13.6%	0.65 [0.30, 1.42]	-	_
Lu and Wei 2009	6	30	13	30	14.5%	0.46 [0.20, 1.05]		
Sun 2011	2	30	6	29	6.8%	0.32 [0.07, 1.47]	-	—
Zhu and Guo 2011	9	92	29	90	32.7%	0.30 [0.15, 0.60]	-	
Total (95% CI)		249		245	100.0%	0.43 [0.31, 0.60]	•	
Total events	39		89					
Heterogeneity: Chi² =	2.40, df = 5	(P = 0.	79); I ² = 0	%		ŀ	0.01 0.1	10 10
Test for overall effect:	Z = 5.01 (F	< 0.000	001)				0.01 0.1 fours experimental	I 10 10 Favours control



Alleviate Drug Toxic Side effects on WBC & Platelet

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Chinese Herbal Medicine as an Adjunctive Therapy for Cancer Treatment



Improve Overall Survivals Rate

	Experim	ental	Contr	ol		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C	M-H, Fixed, 95% CI
Chen et al 2008	27	51	23	49	18.9%	1.13 [0.76, 1.67]	+
Chen et al 2011	26	40	14	37	11.7%	1.72 [1.07, 2.75]	-
Li et al 2003	17	40	8	40	6.5%	2.13 [1.04, 4.35]	•
Lu and Wei 2009	20	30	14	30	11.3%	1.43 [0.90, 2.26]	•
Yang 2007	14	32	13	34	10.2%	1.14 [0.64, 2.04]	-
Zhang et al 2008	23	51	18	55	14.0%	1.38 [0.85, 2.24]	
Zhang et al 2012	44	63	32	56	27.4%	1.22 [0.92, 1.62]	•
Total (95% CI)		307		301	100.0%	1.36 [1.15, 1.60]	♦
Total events	171		122				
Heterogeneity: Chi ² = 4	4.24, df = 6	(P = 0.6)	64); I ² = 0 ⁶	%			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Test for overall effect:	Z = 3.61 (P	= 0.000	03)				0.02 0.1 1 10 50 Favours CT Favours CTC

Figure: Number of patients with survival > one-year. Overall survivals estimated from meta-analysis of pairwise comparisons in the patients with chemotherapy combined Chinese herbal medicine (CTC, treatment group) versus patients in chemotherapy (CT, control group).





Cancer Adjuvant Medications

- Alleviated Drug Toxicity
- Improved Blood Profile & Immunity
- Improved Treatment Response

When use in conjunction with main stream cancer treatments Present to patient as the option with

- Increased Survival
- Improved Quality of Life





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