A list of clinical trials with curcumin in patients with different diseases

Disease	Dose/Frequency	Patients	Response	Reference
Safety trials				
Phase 1	2000 mg/day[1]	10	Pipeline enhanced bioavailability by 2000%	Shoba et al,1998
Phase-I	500-12,000 mg/day x 90 days	25	Histologic improvement of precancerous lesions[4]	Cheng et al, 2001
Phase 1	500-12,000 mg/day	24	Safe, well-tolerated even at 12 g/day	Lao et al, 2006
Efficacy trials				
Rheumatoid arthritis	1200 mg/day x14 days	18	Improved symptoms	Deodhar et al, 1980
Postoperative inflammation	400 mg; 3 x/day x5 days	46	Decrease in inflammation	Satoskar et al, 1986
External cancerous lesions	1% ointment x several months	62	Reduction in smell In 90% pts, Reduction of itching in all cases, Dry lesions in 70% pts. Reduction in lesion size & pain in 10% pts.	Kuttan et al, 1987
Cardiovascular	500 mg/day x 7 days	10	Decreased serum lipid peroxidase (33%), Increased HDL cholesterol (29%), Decreased total serum cholesterol (12%)	Soni and Kuttan, 1992
HIV	625 mg; 4x/day x 56 days	40	Well tolerated	James et al,1996
Gall bladder function	20 mg, single dose (2 h)	12	Decreased gall bladder volume	Rasyid et al,1999
Chronic anterior uveitis	375 mg; 3x /day x 84 days	32	86% decrease in chronic anterior uveitis	Lal et al,1999
Psoriasis	1% curcumin gel	40	Decreased PhK[2], TRR[3], parakeratosis, and density of epidermal CD8+ T cells	Heng et al, 2000
Atherosclerosis	10 mg; 2x/day x 28 days	12	Lowered LDL and apoB, Increased HDL and ApoA	Ramirez-Bosca et al,2000
Idiopathic Inflammatory Orbital Pseudotumors	375 mg; 3x /day x 180-660 days	8	4 pts recovered completely 1 pt showed decrease in swelling No recurrence	Lal et al,2000
Colorectal cancer	36-180 mg/day x 120 days	15	Lowered GST	Sharma et al, 2001
Human gall bladder function	20-80 mg, single dose (2 hours)	12	Reduced gall bladder volume by 50%	Rasyid et al, 2002
Irritable bowel syndrome	72-144 mg/day x 56 days	207	Reduced symptoms	Bundy et al, 2004
Colorectal cancer	450-3600 mg/day x 120 days	15	Lowered inducible serum PGE2 levels	Sharma et al, 2004
Liver metastasis from CRC	450-3600 mg/day x 7 day	12	Low bioavailability	Garcea et al, 2004
Cadaveric renal transplantation	480 mg; x1-2/day x 30 days	43	Induced HO-1 activity Improved early graft function	Shoskes et al, 2005
Tropical pancreatitis	500 mg/day x 42 days	20	Improved symptoms	Durgaprasad et al, 2005
Inflammatory bowel disease	550 mg; x 2-3/day x 60 days	10	Improved symptoms	Holt et al, 2005
Colorectal cancer	450-3600 mg/day x 7 days	12	Decreased M1G DNA adducts	Garcea et al, 2005
Ulcerative colitis	2000 mg/day x 180 days	89	Maintains remission (how many)	Hanai et al, 2006
Improves cogenitive function	-	1010	Better MMSE score[5]	Ng et al, 2006
Familial adenomatous polyposis	480 mg; x3/day x 180 days	5	Reduces polyp numbers and volume in FAP patients	Cruz-Correa et al, 2006

Notes: 1. + Piperine 20 mg/kg; 2, PhK: Phosphorylase kinase; 3.TRR: keratinocyte transferrin receptor ; 4. Histologic improvement of precancerous lesions was seen in 1 out of 2 patients with recently resected bladder cancer, 2 out of 7 patients of oral leucoplakia, 1 out of 6 patients of intestinal metaplasia of the stomach, I out of 4 patients with CIN and 2 out of 6 patients with Bowen's disease; 5. MMSE: Mini-Mental State Examination Score.

A list of ongoing clinical trials with curcumin in patients with different diseases

Disease	Study Type/Design	Patients #	Start Date	Trial Site
Colon cancer	Phase-I, Randomized	24	Completed	Univ. of Michigan, Ann Arbor, USA
Colorectal cancer, ACF [1]	Phase-I, Randomized[2]	-	Suspended	Rockefeller University Hospital, New York, USA
Colon cancer	Phase-III, Randomized	100	March, 2006	Tel-Aviv Sourasky Medical Center, Tel-Aviv, Israel
Colorectal cancer, ACF[1]	Phase-II, Non-randomized	48	September, 2006	Univ. of Illinois, Chicago, USA
FAP	Phase-II, Randomized[4]	68	July, 2005	Univ. of Pennsylvania, Philadelphia, USA
FAP	Phase-II, Non-randomized	-	November, 2005	Johns Hopkins Univesity, Baltimore, USA
Aberrant crypt foci	Prevention, Randomized[5]	60	April, 2004	Cancer Institute of New Jersey, New Brunswick, USA
Pancreatic cancer	Phase-II, Non-randomized[6]	45	July, 2004	Rambam Medcial Center, Haifa, Israel
Pancreatic cancer	Phase-II, Non-randomized	50	November, 2004	M.D. Anderson Cancer Center, Houston, USA
Pharmacokinetics	Treatment, Non-randomized	6	August, 2005	Massachusetts General Hospital, Boston, USA
Myeodysplastic syndrome	Phase II	30		Univ. Massachusetts, Worcester, USA (Raza A)
Alzheimer's disease	Phase-II, Randomized	33	July, 2003	Univ. of California Los Angeles, Los Angeles, USA
Alzheimer's disease	Phase-I &II, Randomized[7]	30	Completed	Chinese University of Hong Kong, Shatin, Hong Kong
Multiple myeloma	Randomized[8]	30	November, 2004	M.D. Anderson Cancer Center, Houston, USA
Myelodysplastic syndrome	Phase-I &II, Non-randomized[9]	50	December, 2006	Hadassah Medical Organization, Jerusalem, Israel
Psoriasis	Phase-II, Non-randomized[10]	-	October, 2005	Univ. of Pennsylvania, Philadelphia, USA
Epilepsy	Phase 1	?	?	AIIMS, Delhi, India (Gupta YK)
Advanced HNSCC	Phase II (1-8 g/day; 56 d)	40	?	Himalyan Instutute od Medical Sciences, India (Saini S)
HNSCC	Phase II/III DBRPC (3.6 g/day,bid)	300	?	AIIMS, Delhi, India (Bahadur S/Ranju R/Rath GK/Julka PK)
Cervical cancer (Stage IIb,IIIb)	Phase II/III DBRPC (2 g/day,bid, 1 year)	100	?	AIIMS, Delhi, India (Singh N/Jain SK/Rath GK/Julka PK)
Oral premalignant lesions	Phase II/III DBRPC (4 g/day,bidx 28 d)	90	?	Tata Memorial Cancer Ctr, India (D'Cruz A)
Oral premalignant lesions	Phase II/III DBRPC (3.6 g/day,bid)	96	Nov, 2006	Amrita Institute, Kochi, India (Kuriakose MA)
Oral leukoplakia	Phase II (curcumin gel, 3x/day, 6 mo)	100	?	Regional cancer center, Trivan, India(Ramadas K, Pillai MR)
Gall bladder cancer	Phase II (2-8 g/day)	60	?	BHU, India (Shukla VK)

Notes: 1. ACF; Abrerrant crypt foci

Trials were performed with curcumin in combination with 2. Quercetin[2], sulindac; 2. Celecoxoib; 3. ACF; 4. Curcuminoids; 5. NSAIDs; 6. Gemcitabine; 6. Ginkgo extract; 7. Bioperine; 8. Coenzyme Q10; 10. Curcuminoids C3 complex; DBRPC, Double blind, randomized placebo-controlled