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Diplomarbeit

Acupuncture as treatment of inflammatory bowel diseases (IBD) - an evidence based review

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Graz, 30.Juni.2009

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Zusammenfassung

Hintergrund: In der westlichen Welt ist im letzten Jahrzehnt eine deutlich steigende Nachfrage nach Akupunkturbehandlungen zusätzlich zu schulmedizinischen Behandlungs- und Therapiemethoden zu erkennen. Der Einsatz einer ganzheitlichen Medizin gewinnt zunehmend an Akzeptanz in der medizinischen Fachwelt.

Für viele verschiedenste akute und chronische Beschwerdebilder gelten Akupunkturbehandlungen nach den Regeln der Traditionellen Chinesischen Medizin (TCM) als dokumentiert und qualitätsgesichert. Das in der TCM als „feucht – heißer Durchfall“ beschriebene Krankheitsbild kann den chronisch entzündlichen Darmerkrankungen (CED) zugeordnet werden.

Auf Grund der mannigfaltigen Ätiologien und der Symptomvielfalt war es bis dato nicht möglich einen adäquaten therapeutischen Algorithmus zu entwickeln. Wegen der Komplexität dieses Krankheitsbildes ist eine deutliche Tendenz in Richtung komplementäre bzw. ganzheitliche Therapiemethoden zu verzeichnen, von denen die Akupunktur einen besonderen und effektiven Stellenwert einnimmt.

Methodik: Aus der Aktualität dieser Thematik (steigende Inzidenz in hoch entwickelten Ländern; langer Leidensweg und großer Leidensdruck für die PatientInnen) wurde diese Literaturstudie durchgeführt.

Ergebnisse: Die Anzahl der bereits durchgeführten Studien zum Thema „CED und Akupunktur“ ist gering. Die Grundlage dieser Problematik bildet ein kleines PatientInnenklientel, da die akute Verschlechterung des Gesundheitszustandes und die daraus resultierende Einnahme von nicht definierten allopathischen Medikamenten zu den Studienabbruchkriterien zählen.

Bei allen untersuchten PatientInnen konnte durch die Akupunkturbehandlung eine signifikante Reduktion der Entzündungsparameter erreicht werden. Die klinischen Parameter zeigten keine signifikante Veränderung nach Beendigung der Studien. Alle StudienteilnehmerInnen der TCM-Akupunktur-Gruppe gaben eine eindeutige Verbesserung der Lebensqualität an.

Zusammenfassung: Aufgrund der geringen Anzahl der Studien ist es schwierig eine Gewichtung der Studienergebnisse durchzuführen. Eine Durchführung von Doppelblindstudien zu dieser Thematik ist sehr schwierig, da die Akupunkteure hinsichtlich der zu nadelnden Akupunkturpunkte informiert sein müssen.

Die Effektivität der Akupunkturbehandlung bei verschiedenen komplexen Krankheitsbildern gilt als klinisch überprüft und statistisch erwiesen. Zur Verifizierung der Effektivität von Akupunktur bei CED und zu deren Aufnahme in den therapeutischen Algorithmus werden weitere Studien benötigt.

Abstract

Background: In the western countries for the past decade, a distinct demand for acupuncture treatment in addition to the western medical treatment and therapy models is recognized. The image of a holistic medicine is gaining increasing acceptance among medical experts.

For many clinical symptoms and syndromes acupuncture treatment according to the rules of traditional chinese medicine (TCM) is already documented and quality assured. Continuous expansion and therapy improvement will offer acupuncture treatment also in patients with chronic diseases. In TCM, a disease is described with "damp hot diarrhea". This clinical picture can be assigned to the inflammatory bowel diseases (IBD).

To date, for IBD it was difficult to find a corresponding treatment algorithm. This fact extends the application areas for alternative therapies, assuming acupuncture a special and effective rating.

Methods: Due to acute relevance of this topic (increasing incidence rates in highly developed countries, with a life of suffering and psychological strain) this literature research was performed. The number of studies up to now addressing "IBD and acupuncture" is small. The reason why can be attributed to patients itself: Study participants with a deterioration of health status, in most cases characterized by an increase in inflammatory activity, and in some cases shortly after the beginning of the study, had to end the participation because of starting an adequate medication, thus not fulfilling the inclusion criteria of the study.

Results: All patients had significantly less inflammatory activity during acupuncture treatment. The clinical parameters showed no change after the end of the study. All study participants in the TCM group reported a significant improvement in their quality of life.

Conclusion: Due to the small number of studies, it is difficult to rate the results. As the acupuncturist always needs to know the location of the needled acupuncture point, double-blinded studies are extremely difficult to set up.

Acupuncture treatment for complex diseases has already demonstrated positive effects. However, further studies are needed to evaluate the effectiveness of acupuncture treatment for IBD.

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1 Introduction

For decades the chronic inflammatory bowel diseases (IBD) were relegated to a special rating of medical research in comparison to other diseases. Due to difficulties in defining a clear etiology or pathogenesis of this disease, it was hitherto not possible to develop an adequate treatment algorithm.

The IBD include primarily Crohn's Disease (CD) and Ulcerative Colitis (UC). Up to now the etiology of these diseases are largely unknown. Although there exist two different clinical pictures, some modalities in etiology, pathogenesis, therapy, and in the clinical course of these diseases are presented.

For both diseases a genetic predisposition may be proven. A special role is attributed to multifactorial genesis. However, immunological processes, environmental influences and emotional aspects are discussed as predisposition to IBD.

Both diseases, CD and UC, manifest in a shape of a distinct lymphocytic chronic destructive inflammation of the several segments of the gastro-intestinal tract, corresponding to a variety of extra-intestinal complications.

The clinical course of IBD is non-specific and individually in process, complicating the differential-diagnostic clarification. For both diseases there are various primary possibilities of manifestations: To substantiation of the diagnosis CD is mostly signed with pain in the right lower abdominal region and diarrhea without admixture of blood in the foreground; patients with UC primarily suffer from gas pains, tenesmus, as well as bloody mucous diarrhea.

Up to now the one and only possibility to verify CD or UC is the endoscopic examination of the colon and the terminal ileum. The differential-diagnostic clarification and final diagnosis may be confirmed by endoscopic biopsies including all inflamed areas. Factoring in the clinical picture CD is able to spread to other, more proximal located segments of the digestive tract. After having taken biopsy diagnostic rating of colon and terminal ileum, a further clarification of the remaining gastrointestinal tract may be particularly recommendable.

Currently there are partial effective treatment options for IBD, although there is a multitude of therapeutic basic approaches inherent: Symptom-based diet, supportive therapy, prophylaxis of osteoporosis, drug therapy, interventional

endoscopy and surgical measures. Unfortunately, up to now none of these therapeutic proposals decisively prevailed. Despite the best possible medical care patients frequently suffer from a massive limitation of their quality of life.

For this reason complementary and alternative treatments, such as acupuncture, osteopathy, homeopathy, traditional chinese medicine (TCM), and anthroposophic medicine increase in importance.

Among patients, especially acupuncture treatment is very well received. The efficacy of this complementary treatment method in relation to the patients' subjective experience of disease was documented in several studies. In contrast to the subjective primary sensation the results of the objective clinical parameters were not convenient to show a distinct improvement up to now.

1.1 Material and Methods

Due to the controversial discussed results on the efficacy of acupuncture in IBD, we performed this literature research. The present work provides an overview of current research findings on this issue.

To gain the basic knowledge, I have delved into textbooks and reference books about internal medicine, pathology, psychosomatics, and acupuncture.

In addition, articles from databases and various acupuncture journals were used for this literature research.

2 Acupuncture

2.1 Historic Sites

Acupuncture is the most important part of Traditional Chinese Medicine (TCM) representing an ancient Chinese therapy method.

In Europe first informations on acupuncture are registered in the 17th century going back on a deliverance of Jesuit monks from Beijing defining the original Chinese notation “Zhen Jiu” “burning and stinging” as acupuncture, a composition of “acus” = “needle” and “pungere” = “sting”.

The first German language publication on acupuncture was registered in the year 1824, a translation of a research article “A Treatise on Acupuncturation” authored by the Englishman James M. Churchill. In the Western countries acupuncture established only in the 2nd half of the 20th century. For about two decades, acupuncture treatment is to be valid as a therapeutic method, and efficacy was verified in different studies.

2.2 Conception and Technique

In the Chinese acupuncture there are assumed 361 existing acupuncture points, positioned on the meridians. There are 12 main meridians, each parallel located in pairs on both halves of the body. Inserting the needles into the corresponding acupuncture points the acupuncturist achieves a stimulation, and that way flowing of “Qi” (vital energy) is to be influenced.

According to the rules acupuncture treatment lasts about 30 minutes on average, the number of needles depends on the therapeutic subject. In earlier times were used traditionally gold and silver needles, today small steel needles with different diameters (0,16 mm up to 0,26 mm; ear acupuncture mean 0,8 mm) are common practice. Inserted needles are stimulated by gentle tonizising for several times.

The consequence of short touching the inserted needles and tonizising the acupuncture points is mimicking a pulling and electrifying sensation of pain.

Acupuncture treatment may focus on different areas: Body acupuncture, ear acupuncture and auriculotherapy.

2.3 Diagnostics

The base of TCM–physiology is the knowledge about the functional circuits. Five available functional circuits are differentiated, and each is respectively formed of a linked pair of meridians.

Following basics Qi–dynamics are integrated in a cycle going off in accordance with the pattern of five seasons: Spring, summer, late summer, autumn, and winter. Each circle develops from a previous one and segues into the next. Contradictions and couples are complementing. The functional circuits are assigned to five elements: Wood, fire, earth, metal and water. The human organism is a combination of five “organs”: Liver, heart, spleen, lung and kidney, each corresponding to one of the five elements and to the five seasons. The organs are conducting to organism like the five seasons to the cycle of uprising and fading, and the five elements are corresponding to the universal matter.

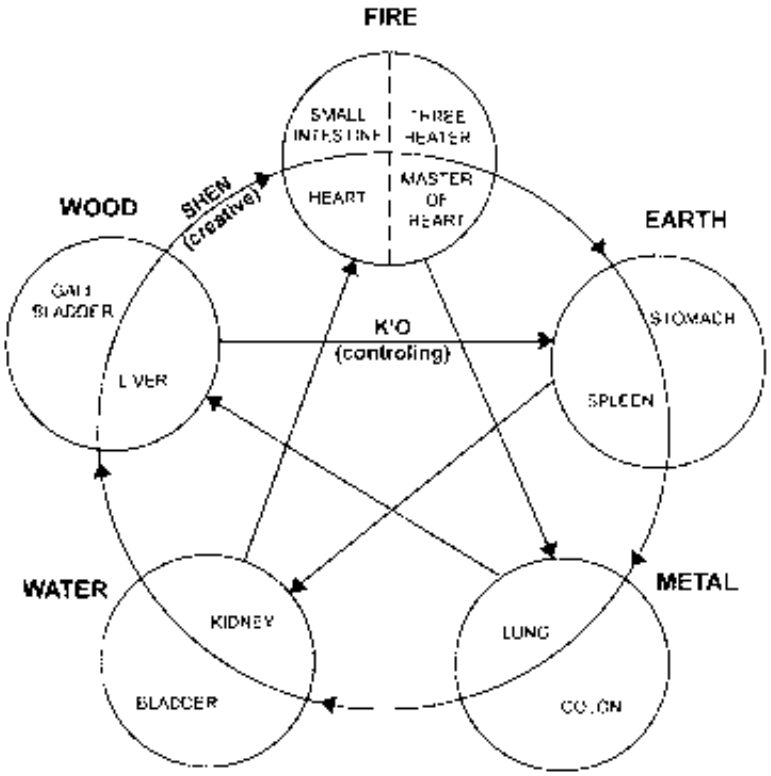

Table 1: Functional cycle graphic

Function circle	Liver/ Gall	Heart/Small intestine	Spleen/ Pankreas	Lung/Large intestine	Kidney/ Bladder
Conversion phase	Wood	Fire	Earth	Metal	Water
Climate	Wind	Heat	Moisturet	Drought	Refrigeration
Season	Spring	Summer	Late Summer	Autumn	Winter
Key Features	Dynamic/Activity/ Blood Memory	Personality/ being	Energy Building	Rhythm/Order	Hereditary Constitution
Tissue layer	Tendons/ Musculature	Vascular layert	Subcutis	Skin	Bone/CNS
Physical area of responsibility	Mesenchym	Circulatory system	Intestinal tract	Respiratory tract	Urogenital tract
Taste	sour	bitter	Sweet	sharp	salty
Vocal expression	call	laugh	Sing	cry	groan
Colour	green-blew	red	Yellow	white	black
Emotions					
in abundance	Anger/Trouble	Joy	digressive Thinking	Egoism	Stubbornness
in weakness	Pessimism/ Discouragement	Depression	Brooding/ Bottling up	Sadness	Fear

Table 2: Functional cycle description

2.4 Applications and Impact

The World Health Organisation (WHO) is indicating a list (3) of acupuncture treatment among the following areas and symptoms:

- Diseases of the respiratory tract
- Gastrointestinal disorders
- Sleep disorders
- Bronchial (allergic) asthma
- Neurological disorders
- Eye diseases
- Musculoskeletal discomforts
- Oral diseases
- Chronic pains without defined clinical characteristics

2.5 Side effects

In general side effects on properly handling acupuncture therapy have less importance. Skin irritations, infections due to needles, and circulatory embarrassments are documented rarely.

2.6 Contraindications

- Skin diseases (e.g. urticaria, dermatitis)
- Sensitivity disorders of skin (e.g. polyneuropathy)
- Severe psychical disorders (e.g. schizophrenia, mania)
- Epilepsy
- Severe contagious, infektious diseases (e.g. tuberculosis)
- Certain tumor types
- Acute inflammations and injuries
- Infants and babies

3 Inflammatory Bowel Diseases (IBD)

3.1 Crohn's disease (CD)

Crohn's disease is a condition of chronic inflammation which involves the whole alimentary tract from mouth to anus, but frequently involving the distal small bowel and proximal large bowel.

The first description in Europe of an inflammatory intestinal disease was documented in the 18th century (24). The landmark publication of Burrill B. Crohn and his colleagues Ginzburg and Oppenheimer represented a description of "terminal ileitis" as a distinct entity and chronic disease in 1932 (12). The terms "regional enteritis" and "granulomatous enterocolitis" were discussed, but didn't find common acceptance leaving or not including characteristic clinical parameters. The name "Crohn's disease" (CD) has been adopted to encompass the many clinical presentations of this pathologic entity.

3.1.1 Etiology and Pathogenesis

The genetic and pathologic findings in Crohn's disease (CD) are not clear at the time. Over decades bacteriological or infectious causes are basis for discussion. Among the most enduring hypotheses *Mycobacterium avium subspecies paratuberculosis* is displaying to be the causative agent of Crohn's disease. This notion dates to Dalziel's observation in 1913, that idiopathic granulomatous enterocolitis in humans is similar to Johne's disease, a granulomatous bowel disease of ruminants caused by Mycobacterium avium subspecies paratuberculosis (51) Although *M. paratuberculosis* is extremely fastidious in its culture requirement, it wasn't possible to prove or reject the hypothesis.

Autoimmune response and autoimmune mechanism as well as multifaceted genesis with genetic disposition take place in the discussion explaining a multifaceted disease. The sustained nature of the immune response in CD or IBD respectively may have diverse causes. Poor intestinal barrier function may permit continued exposure of lamina propria lymphocytes to antigenic stimuli from the lumen. Poor barrier function also may be a factor in the onset of Crohn's disease, because such patients have increased intestinal permeability preceding clinical relapse of disease (13). In patients with CD the mucosal T-cells have defective

apoptosis (48).This could be the reason for the sustained nature of inflammation in CD and ulcerative colitis (UC), because programmed cell death of lymphocytes is a normal mechanism for dampening immune response (48). The interaction between T-cells and macrophages also is critical to the pathogenesis of CD. Both cell types are found together in the earliest inflammatory process of CD. The antigens perpetuating the inflammatory response are “devoured” by macrophages.

To prove genetic predispositions family members of affected persons were observed in developing IBD. The relative risk among first-degree relatives is 14 to 15 times higher than that of the general population (6). Studies of monozygotic and dizygotic twins suggest that genetic composition is a more powerful determinant for CD than for CU: The concordance rate among monozygotic twins is 67% for CD, but only 13% to 20% for UC; most studies have suggested that concordance of disease location (5, 35, 43) and disease behaviour (11) are higher than one would expect by chance.

After the sequencing of the entire human genome, it was possible to identify specific IBD genes on chromosome 16: IBD 1 locus. Two independent groups have identified the IBD 1 locus as the NOD2 (nucleotide-binding oligomerization domain 2) gene, also known as CARD 15 (caspase-recruitment domain 15) (20, 31). The discovery of the association of NOD2/CARD15 with CD has opened a remarkable window into the pathogenesis of CD.

3.1.2 Epidemiology

In the last years studies about lifestyle in developed and developing countries and differences between rural and urban regions took place in the specification of environmental effects favouring the developing of CD. The rising incidence of CD over many decades highly suggests an environmental contribution to the expression of disease. Epidemiological studies have examined numerous risk factors. Breast-feeding seems to be protective for IBD, presumably by playing a role in early programming of immune responses in the developing gastrointestinal tract. ”Touching” with diverse environmental antigens in the course of childhood forces immune defence.

Incidence rates of patients with CD reported in the last decade may show a different distribution all over the world confirming an absolute presumption of a

north-south gradient and different increasing rates in developed and developing countries.

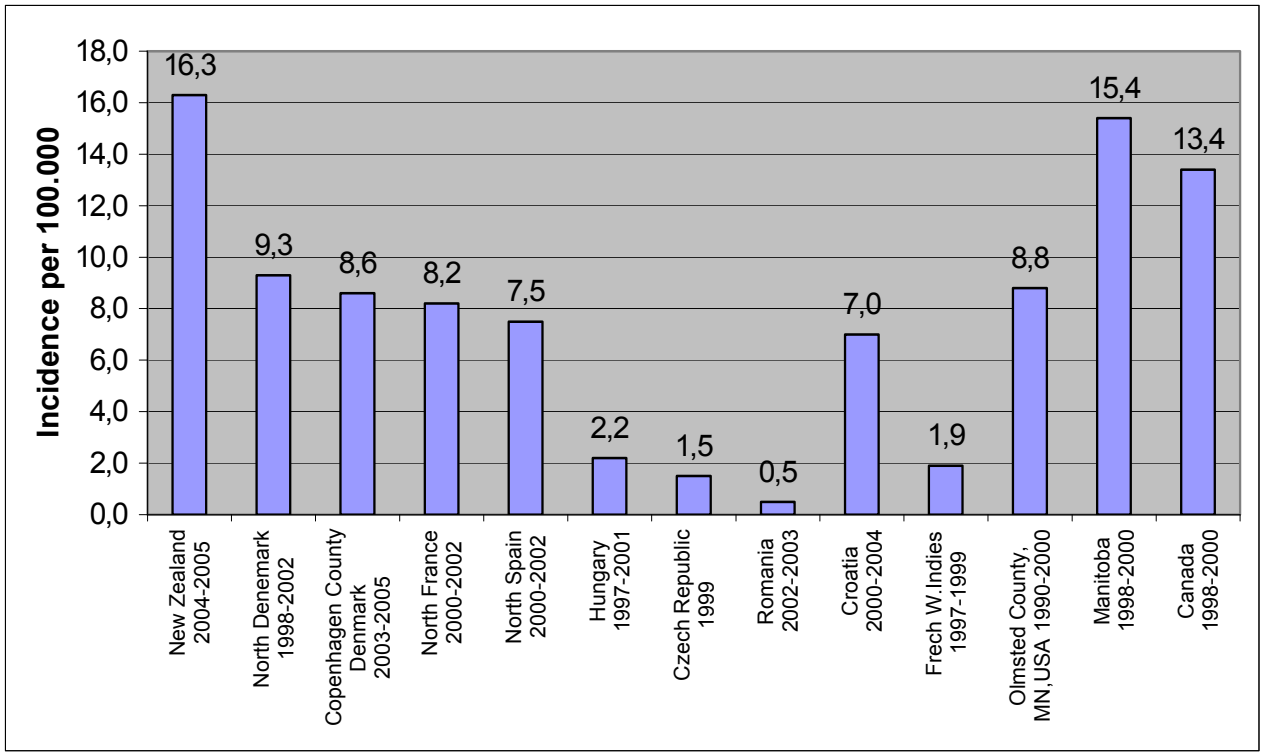

Table 3: Incidence rates of CD reported in the past decade

Hygienic standards, smoking, using oral conceptives among women, increased intake of refined sugars and paucity of fresh fruits and vegetables in the diet are discussed in favouring CD.

Many patients report a correlation between disease exacerbations and stress. Although depression and anxiety are a common reaction to illness, Crohn's disease has not been shown to be caused by stress or anxiety.

3.1.3 Pathology

Focal intestinal inflammation is the hallmark pathologic finding in CD. The tendency for focal inflammation is evident in focal crypt inflammation, focal areas of marked chronic inflammation, the presence of aphthae and ulcers on a background of little or none chronic inflammation, and the interspersing of segments of involved bowel with segments of uninvolved bowel. Even within a single biopsy copy one may see a pronounced variability in the degree of

inflammation. The presence of focally enhanced gastritis, characterized by a focal perifoveolar or periglandular lymphomonocytic infiltrate , is a common finding that occurs in 43% of unselected patients with CD (33). This finding underscores the focal nature of the inflammation., despite the strong potential for inflammation to occur anywhere along the longitudinal axis of the gut. To a certain extent, the nature of the findings and the depth of inflammatory changes depend on the chronic inflammation. Variability and long delay between the onset of the disease process and its diagnosis make difficult to observe the evolution of pathology. The earliest characteristic lesion of CD is the aphtous ulcer. These superficial ulcers are minute, ranging in size from barely visible to 3 mm, and are surrounded by a halo of erythema (40). In the small intestine, aphtous ulcers arise most often over lymphoid aggregates with destruction of the overlying M cells. In the colon, aphthae may occur without an endoscopically visible central erosion and may be associated with lymphoepithelial complexes (32).
With linear and transverse coalescense of ulcers, the classic cobblestoned pattern is the result.

3.1.4 Clinical presentation

The presentation of CD might be subtly and varies considerably: location of disease within the gastrointestinal tract, intensity of inflammation, and the presence of specific intestinal and extra-intestinal complications.
Disease of the ileum: Involvement of the cecum; years of subclinical inflammation may progress to fibrotic stenosis; patients suffer from anorexia, loose or frequent stools, weight loss, malnutrition and fever.
Colonic disease: Involvement of the right colon; the presenting symptom is diarrhea, occasionally with passage of obvious blood.
Perianal disease: 24% of patients with CD; perianal disease precedes intestinal manifestations with a mean lead time of 4 years (4). Perianal findings may be categorized as skin lesions, anal canal lesions, and perianal fissures (8).

As CD seems to have a multifaceted pathogenesis and an indifferent pathology it’s unalterable to define CD in a differential diagnosis:

Differential Diagnosis of Ileitis	Differential diagnosis of Colitis
Backwash Ileitis in ulcerative colitis	Acute self-limited colitis
Drug-related	Behcert´s disease
Ischemic (oral contraceptives, ergotamine,	
amphetamines,phenylephrine, cocaine	Chronic granulomatous disease
NSAID-related ulcer or stricture	Crohn´s Colitis
	Diversion colitis,
Gynecologic disorders	Diverticulitis
Ectopic pregnancy	Drug-related intestinal inflammation
Endometriosis	e.g. NSAID´s
Ovarian cyst or tumor	Gold
Ovarian torsion	Penicillamine
Pelvic inflammatory disease	Enteritis st. p. radiation
Tubo-ovarian abscess	Eosinophilic gastro-enteritis
ileitis associated with	
spondyloarthropathy Infection	GvhD
Actinomycosis israelii	Infections
Anisakis simplex	Aeromonas pleisioides
Cryptococcosis	Amebiasis
CMV	Campylobacter
Histoplasma capsulatum	Clostridium difficile
Mycobacterium avium complex	CMV
Mycobacterium tuberculosis	Escherichia coli
Salmonella	Mycobacterium tuberculosis
Yersinia enterocolitica	Salmonella
Yersinia pseudotuberculosis	Schistosomiasis
Infiltrative disorders	Shigella
Amyloidosis	Strongyloidiasis
Eosinophilic gastroenteritis	Yersinia enterocolitica
Other Inflammatory disorders	Ischemic colitis
Appendiceal abscess	Microscopic colitis
Appendicitis	Collagenous colitis
Divertikulitis	Lymphocytic colitis
Lymphoid nodular hyperplasia	Sarcoidosis
	Segmental colitis associated with
Neoplasm	diverticular disease
	Solitary rectal ulcer syndrome
Carzinoid tumor	Ulcerative colitis

Cecal or ileal ardenocarcinoma	
Lymphoma	
Metastatic cancer	
Radiation enteritis	
Torsion of the appendiceal epiploica	
Vascular disorders	
Behcet´s Syndrome	
Henoch-Schönlein purpura	
Intestinal ischaemia (focal segmental ischaemia:acute enteritis, chronic enteritis, stricture;chronic mesenteric ischemia)	
Vasculitis (polyarteritis nodosa	
Churg-Strauss Syndrome	
Wegener Granulomatosis	
giant cell arteritis	
thromoangiitis abliterans)	

Table 4: Differential Diagnosis of Ileitis and Colitis

To find a classification among CD-patients, including developing of disease, inflammatory process and general conditions, the Crohn's Disease Activity Index (CDAI) was installed in 1976 by Becktel JM, Singleton JW, et al.

3.1.5 Components of the index

The CDAI was developed by WR Best and colleagues from the Midwest Regional Health Center in Illinois, in 1976. The index consists of eight factors, each summed after adjustment with a weighting factor. The components of the CDAI and weighting factors are the following:

Clinical or laboratory variable	Weighting factor
Number of liquid or soft stools each day for seven days	x 2
Abdominal pain (graded from 0-3 on severity) each day for seven days	x 5
General well being, subjectively assessed from 0 (well) to 4 (terrible) each day for seven days	x 7
Presence of complications*	x 20
Taking Lomitil or opiates for diarrhea	x 30
Presence of an abdominal mass (0 as none, 2 as questionable, 5 as definite)	x 10
Absolute deviation of Hematocrit from 47% in men and 42% in women	x 6
Percentage deviation from standard weight	x 1

*One point each is added for each set of complications:

- the presence of joint pains (arthralgia) or frank arthritis
- inflammation of the iris or uveitis
- presence of erythema nodosum, pyoderma gangrenosum, or aphthous ulcers
- anal fissures, fistulae or abscesses
- other fistulae
- Fever (> 100 °F) during the previous week

Remission of Crohn's disease is defined as a CDAI of less than 150. Severe disease is defined as a value of greater than 450. Most major research studies on medications in Crohn's disease define response as a fall of the CDAI of greater than 70 points.

The medical therapy should be individually modulated for every patient depending on severity of disease factoring in indications and contraindications:

Aminosalicylates

Antibiotics

Glucocorticoids

Immune Modulators

- Thiopurine agents
- Methotrexate
- Cyclosporine

Biologic Response Modifiers

- Infliximab

3.1.6 Prognosis

The natural history of CD is a moving target, continuously changing as therapeutic strategies improve. The course is highly variable and difficult to predict for affected patients. In the first year after diagnosis , the cumulative relapse rate is high, approaching 50%, with 10% of patients having a chronic relapsing course (28).

Over a 4-year period, the analysis has shown that 22% of patients remain in remission, 25% experience chronically active symptoms, and 53% have a course that fluctuates between active and inactive disease (29).

The estimated risk of colorectal cancer in CD has varied widely. When CD involves the large bowel, the excess risk of colorectal cancer appears to be similar to that in UC of similar extent (25).

Population-based studies generally have shown a modestly increased mortality-rate in CD (16, 17, 30 36, 37). The excess mortality may be ascribed to complications of CD, including colorectal cancer.

3.2 Ulcerative Colitis (UC)

Ulcerative colitis is a chronic inflammatory disease of the gastrointestinal tract affecting the large bowel. In 1859 Dr. Samuel Wilks described this disorder as

“idiopathic colitis“. (53). A more complete description of UC followed by Sir Arthur Hurst considering sigmoidoscopic appearances (21).

3.2.1 Epidemiology

Incidence and prevalence depend on geographic region, ethnicity and environmental effects. Clinical presentations and extraintestinal manifestations make difficult the diagnosis. Available epidemiologic data derive from population- or hospital-based studies conducted in North America and Northern Europe. Data define a distinct North-South gradient:

Incidence of Ulcerative Colitis in Various Geographic Regions		
Region	**Period of Study**	**Incidence (per 100,000 person-year)**
North America		
Alberta	1981	6.0
Manitoba	1987-1996	14.3-15.6
California	1980-1981	10.9
Minnesota	1984-1993	8.3
Europe		
Scandinavia	1980-1999	9.2-20.3
Great Britain	1985-1994	13.9
Northern Europe	1988-1994	3.2-11.8
Southern Europe	1980-1994	1.5-9.6
Asia		
Israel	1987-1992	Not available
India	1999-2000	6.0
Japan	1991	1.9
Korea	1992-1994	1.2
Africa		
South Africa	1980-1984	0.6-5.0
Central and South America	1987-1993	1.2-2.2

Table 5: Incidence of UC in Various Geographic Regions

Prevalence of Ulcerative Colitis in Various Geographic Regions		
Region	**Period of Study**	**Incidence (per 100,000 person-year)**
North America		
Alberta	1981	37.5
Manitoba	1994	169.5
Minnesota	2001	246
Europe		
Scandinavia	1987	161.2
Great Britain	1995-1996	122-243
Northern Europe	1984	24.8
Southern Europe	1988-1992	21.4-121
Asia		
Israel	1980-1985	55.2-70.6
India	1999	44.3
Japan	1991	18.1
Korea	1997	7.6
Singapore	1985-1996	6.0

Table 6: Prevalence of UC in Various Geographic Regions

3.2.2 Etiology and Pathogenesis

At the time the etiology of UC is still unknown. The currently held paradigm involves the complex interaction of three main effects: genetic susceptibility, host immunity, and environmental factors. Dysregulation of the enteric immune response in genetically predisposed individuals leads to the development of acute and chronic inflammation and the pathologic feature of mucosal damage.

Genetic predispositions were observed in UC-affected family members. Data from the United States suggest a preponderance of parent-sibling combinations, but in Great Britain the disease is shared more commonly by siblings. Among Jews the incidence rate of IBD is higher than in the none Jews-population.

The inheritance of UC cannot be described by a simple mendelian model; multiple genes are involved and that different genes may confer susceptibility, disease specificity, and phenotype. Linkage studies have suggested that there are susceptibility genes on chromosomes 2,3,6,7, and 12 (44, 50)

The IBD2 locus on chromosome 12 appears to have the strongest linkage demonstrated in studies involving large numbers of families with UC (34). The

recently identified NOD2/CARD15 gene mutations located on chromosome 16 associated with CD have not been associated with UC (45).

Among the environmental factors smoking is the most associated factor with UC. The results have shown that smoking has a protective! effect of developing UC. Diet, oral contraceptives, food additives, toothpaste, or breastfeeding are not seriously allowed to be associated with UC. Early reports implicated milk allergy as a potential etiology of UC (2, 49, 55), but up to now there is little evidence that milk or any other food are featuring in the etiology of UC.

The main theory of the pathogenesis of UC emphasizes the role of enteric immune response. Breaches in a well-regulated mucosal immune system lead to the chronic uncontrolled mucosal inflammation observed in UC. In this regard, immune mechanisms in the pathogenesis of UC involve both humoral and cell-mediated responses. Intestinal epithelial cells serve barrier functions in enteric immunity. Colonocytes express class II antigens and can function as antigen-presenting cells (27). Abnormalities in colonic epithelial cells can contribute to the developing of UC, whereas patients with UC have an increased turnover rate of colonic epithelium (1). Activation of macrophages, lymphocytes, and colonic epithelial cells leads to the release of a variety of cytokines and mediators that further amplify the immune an inflammatory response of UC and result in tissue damage.

Psychogenic factors seem to have influence not in developing of disease, but in the onset of inflammatory processes.

3.2.3 Pathology

The main involved region is located in the rectosigmoid. In contrast to CD, continuous and symmetrical involvement is the hallmark of UC, with sharp transition between diseased and uninvolved segments of bowel.

Macroscopically, the mucosa in UC appears hyperemic, edematous, and granular in mild disease. In progressing disease the mucosa shows hemorrhagic tissue with punctate ulcers. These ulcers may enlarge and extend into the lamina propria. The characteristic appearance of long-standing disease is an atrophic and featureless colonic mucosa, combined with narrowing and shortening of the colon. Patients with severe disease may develop acute dilatation of the colon, causing in a thin bowel wall and grossly ulcerated mucosa with only small fragments or islands of mucosa remaining.

Microscopically, the early presentation is characterised by edema of the lamina propria and congestion of capillaries and venules, followed by an acute inflammatory cell infiltrate of neutrophils, lymphocytes, plasma cells, and macrophages. Eosinophils and mast cells show an increasing number. Until today a prove to specify histological findings for UC has failed.
In contrast to the transmural involvement of CD, the inflammation in UC characteristically is confined to the mucosa. With increasing inflammation the surface epithelial cells become flattened and potentially ulcerate.

3.2.4 Clinical presentation

Patients with UC suffer from diarrhea, rectal bleeding, passage of mucus, tenesmus, urgency, abdominal pain, fever and weight loss. The symptom complex tends to differ according to the extent of disease (7). The onset of UC typically is slow and insidious, inducing patients not to seek medical attention.
Rectal bleeding: Location of bleeding and the symptoms are often compared or mistaken with bleeding from hemorrhoids. The difference to hemorrhoidal bleeding is a mixture of blood and mucus and eventually incontinence. Patients with severe disease activity pass liquid stool containing blood, pus, and fecal matter.
Diarrhea: The presentation of active disease is characterised of frequent passage of loose or liquid stools and nocturnal diarrhea. The pathopysiology of the diarrhea in UC involves several mechanisms, but failure to absorb salt and water is perhaps the predominant factor (42).
Abdominal Pain: Patients suffer from intermittent abdominal cramping preceding bowel movements and often lasting after defecation. Cause of pain is unclear but a relation to increased tension within the inflamed colonic wall during muscular contraction is plausible.

At the time there is no single test confirming the diagnosis of UC with acceptable specificity. The diagnosis relies on a combination of compatible clinical features, endoscopic appearances, and histologic findings. A differential diagnosis may be essential and unavoidable to clear indifferent presentation of disease, especially in differing IBD (see too Table 4 Colitis / Ileitis):

3.2.5 Differential diagnosis of UC

Infectious etiology	Non-Infectious etiology
Salmonella	Crohn's disease
Shigella	Diverticulitis
Escherichia coli	Ischemic colitis
Campylobacter jejuni	Radiation colitis
Yersinia enterocolitica	Behcet's-disease
Entamoeba histolytica	Diversion colitis
Clostridium difficile	Neutropenic colitis
Aeromonas hydrophila	Eosinophilic colits
Listeria monocytogenes	Mikroskopic colitis
Neisseria gonorrhoeae	Collagenous colitis
Chlamydia	Lymphocytic colitis
Cytomegalovirus	Acute self-limited colitis
Herpes simplex virus	Drugs / Toxins
Schistosomiasis	Nonsteroidal anti-inflammatory drugs .
	Chemotherapy
	Penicillamine
	Gold

Table 7: Differential diagnosis of UC

3.2.6 Endoscopic differentiation of UC and CD

Variable	Ulcerative Colitis	Chron´s Disease
Distribution	Diffuse inflammation that extends proximally from the anorectal junction	Rectal sparing, frequent "skip" lesions
Inflammation	Diffuse erythema, early loss of vascular markings with mucosal granularyty or friability	Focal and asymmetric, "cobblestoning"; granularity and friability less common
Ulceration	Small ulcers in a diffusely inflamed mucosa; deep, ragged ulcers in severe disease	Aphthoid ulcers, linear/serpiginous ulceration; intervening mucosa is often normal Strictures are common
Colonic lumen	Often narrowed in long-standing chronic disease; "tubular colon"; strictures are rare	Strictures are common

Table 8: Endoscopic differentiation of UC and CD

Analogue to the CDAI; Truelove and Witts installed the Ulcerative Colitis Disease Activity Index, a classification categorizing patients into having mild, moderate, or severe UC, based on a combination of clinical findings and laboratory parameters:
Ulcerative Colitis Disease Activity Index

Variable/Score	Criteria
Stool Frequency	
0	Normal
1	1-2 Stool/day>normal
2	3-4 stool/day>normal
3	>4 stool/day>normal
Rectal Bleeding	
0	None
1	Streaks of blood
2	Obvious blood
3	Mostly blood
Mucosal Appearance	
0	Normal
1	Mild friability
2	Moderate friability
3	Exudation, spontaneous bleeding
Physician Global Assessment	
0	Normal
1	Mild
2	Moderate
3	Severe

Table 9: Ulcerative Colitis Disease Activity Index

The UC disease activity index ranges from 0 – 12. Patients finding in the range less than 2 are considered to be in remission of disease; if the score is higher than 10 patients will suffer from severe disease.
As the process and the developing of disease is incalculable in progress 5 main points mark an efficacious medication:

- induce remission
- maintain remission
- maintain adequate nutrition
- decrease disease-and treatment related complications
- improve the quality of life

The following drugs are proposed to implement these five requirements:

Aminosalicylates

- Oral Aminosalicylates
- Topical Aminosalicylates

Glucocorticoids

- Systemic Glucocorticoids
- Topical Glucocortcoids

Immunomodulators

- Azathioprine and 6-Mercaptopurine
- Cyclosporine
- Methotrexate

Antibiotics

Probiotics

Nutritional Therapy

Surgical Therapy

3.2.7 Prognosis

80% of patients with UC have a disease course characterised by intermittent flares interposed between variable periods of remission. The duration of relapse-free periods varies greatly from patient to patient. More than 50% of patients present with mild disease at their first attack, and 6% to 19% of patients have severe disease at presentation (14, 46).

Factors influencing disease relapse and remission include bacterial and viral infections, the use of NSAIDs and antibiotics, smoking, seasonality, and physical stress.

The rate of colectomy varies in studies, in part related to the different proportions of patients with extensive versus limited disease. The probability of colectomy is related to the extent of disease at diagnosis.

Accounting to the morbidity of UC, the mortality has diminished dramatically since the introduction of glucocorticoids, and death from severe attacks now is uncommon. Patients with UC have life expectancy comparable to that of the general population (41, 46, 47). Two studies from the United Kingdom and Denmark reported at most a small increase in mortality in patients with UC (9, 54).

4 Evidence based medicine of acupuncture as treatment of inflammatory bowel diseases (IBD)

4.1 Description of Study Situation

In the following literature research we represent a description of studies including the years 1998 until 2007 subjecting in “Acupuncture in the treatment of IBD“. The low number of studies can be explained in the complex subject matter of the presentation of disease of IBD associating with limited therapy options. Problems are causing in the non-compliance between necessary standardisation of therapeutical treatment in clinical studies, and the axioms of acupuncture providing an indvidual therapy for every patient, corresponding to the rules of TCM respecting diagnostics and therapy.

In the Western world an increasing number of patients, especially those with chronic diseases, are using complementary and alternative medicine (CAM) (15, 19). Moreover several epidemiological studies underline this mainstream for patients suffering from IBD, being interested in a treatment with acupuncture / TCM (38, 52). In Chinese text books one will find a pictured syndrome called “Damp Hot Diarrhea” presenting similar discomforts of patients suffering from IBD (26, 56).

In relation to “acupuncture at IBD” there exist several current studies indicating positive effects of acupuncture (10, 18, 57). But there was no existing controlled randomized study tasking efficacy of acupuncture in IBD-patients.

Ahead of this background Joos et al. (22) performed a prospective, randomised, single-blind controlled trial with two parallel groups (TCM – group: n=27; control – group: n=24) at the first time in the years 1998 / 1999 validating the efficacy of acupuncture among 51 patients indicating symptoms of mild and moderate active CD. The activity of disease was the main target of several parameters, and was categorized by means of the CDAI: Remission was defined as a CDAI score of <150 and severe disease was defined as a CDAI score > 450.

Furthermore subjective sensitivities, patient’s quality of life as well as selected blood parameters, e. g. CRP and acid alpha1 - glycoprotein were included.

The present study was conducted on the Department of Medicine I, University of Erlangen, Germany from October 1998 till September 1999. Patients were recruited by informing resident physicians, general practitioners and gastroenterologists in the region, and through newspaper articles. The diagnosis had to be confirmed by endoscopic biopsy performed within the last two years. To enter the study a score of CDAI between 150 and 300 was defined. Patients with a disease duration of at least one year and maximum 20 years were included. Concomitant medical therapy was allowed in receiving aminosalicylates (without specification of dosage), and / or glucocorticoids (maximum 15 mg per diem).

The main exclusion criteria were an immunosuppressive therapy (up to 3 months before study entry) and / or a daily glucocorticoid dosage of more than 15 mg per diem. Patients were asked not to change medication 4 weeks before study entry and throughout the acupuncture treatment period.

Patients occurring IBD-exacerbation during the period of study participation having needed proximately dosage adjustments were excluded from the study.

As the principle aim parameter the change from baseline in the CDAI after 4 weeks of acupunture treatment was chosen. The secondary objectives were used in defining subjective sensed changes with regard to intensity of pain in conclusion to sensitivities and quality of life. As measurement parameters were used the VAS (visual analogue scale, ranging from 0–10: 0 = no pain; 10 = severe pain) and the IBDQ, a validated questionnaire for quality of life specifically arranged for patients with IBD.

The serum markers of inflammation, CRP and alpha1-acid glycoprotein, were measured before and after acupuncture treatment.

For every patient an individual scheme including the chinese diagnosis criteria was applicated to control course of disease. No patient could be associated to the syndrome spleen-Qi-blank and humidity refrigeration (Table 10).

Chinese Syndromes and Acupuncture Points	
Basic syndromes:	**Basic Points:**
Spleen-Qi-Blank	UB 20, REN 12, ST 36, ST 25, SP 15, REN 6, UB 21, SP 6, Moxa
Combined Syndrome	**Additional Points**
Spleen-Qi-Blank + Kidney-Yang-Blank	REN 6, UB 23, DU 20, DU 4, Moxa
Spleen-Qi-Blank + Liver-Qi-Stagnation	LIV 3, UB 18, GB 34, Moxa only Refrigeration characters
Spleen-Qi-Blank + moisture-heat	LI 11, SP 10, ST 44
Spleen-Qi-Blank + humidity-Refrigeration	

Table 10: Chinese Syndromes and Acupuncture Points

Before study entry the traditional Chinese diagnosis was conducted by a Chinese physician having a long experience in using acupuncture. The entire course of study was observed and controlled by a physician and two doctoral candidates. The final examinations were estimated by an external referee.

Performance of study: All 51 patients were treated in 10 sessions of acupuncture at a time of 30 minutes over a period of 4 weeks. The needling technique was compared between 3 therapists. Needles of same dimension, diameter, fabrication and provenance were used. The acupuncture needles were inserted between 0,5cm and 3cm deep and tonizised by hand as long as the patient felt an aching, dull / tingling or electrifying sensation (DE-QI). A corresponding tonizising of acupuncture points followed 10 minutes after needling and during removing the needles.

For the control group there were defined 9 “non acupuncture points”, described in a precise anatomic position, not to be located near diagnosis specific acupuncture points or frequently occurring trigger points.

The *patients’ collective* was additionaly classified into subgroups referring to gender, duration of disease and medication.

The medical check ups of patients took place before study entry, four weeks after study entry and 12 weeks after the last acupuncture treatment.

Study results: The results showed a stable decrease of disease activity in all medical check ups among the TCM-group (22).

The results demonstrated, the higher the CDAI at start of treatment, the more effective the success of acupuncture treatment. In the TCM group no negative effects and side effects of acupuncture treatment could be verified. Documented concomitants among TCM group and control group could not be directly associated with side effects of acupuncture treatment.

The main reasons for excluding of study during the treatment period were exacerbations or a lack of subjective success in treatment in the control group, but not in the acupuncture group:

drop outs during treatment	n=1	n=4
complete treatment	n=26	n=20
drop outs follow up period	n=5	n=2
completing follow up period	n=21	n=18

At study entry 51 patients participated in acupuncture treatment; 39 patients completed acupuncture treatment.

In another study executed by Joos et al. (23) from the year 2006 there were tested 29 patients suffering from mild to moderate active UC in efficacy of acupuncture treatment. This study was applied as a prospective, randomised, single blind study for the comparison of two treatment groups: Acupuncture group: n=15; control group: n=14. Patients' recruitment was performed on the IBD-outpatients' of the local university clinic in collaboration with resident physicians, general practitioners in the region, as well as via advertisements in local newspapers.

The diagnosis had to be confirmed by endoscopic biopsy performed within the last two years. To enter the study corresponding limitations for medication were defined: Cortisone dose, immunosuppressive agents, and no alternative medicine treatment. For being included in the trial, the CAI had to range between 4 and 10. The mean age of clients was assigned with 37,8 years + / - 12 years. Patients were treated either with traditional acupuncture and moxibustion (acupuncture group), or sham acupuncture (control group). The patients completed 10 treatments over a period of five weeks and were followed up anamnestic during and after acupuncture treatment.

The *result of study* showed a clear positive efficacy of acupuncture treatment. In the acupuncture group the CAI decreased significantly (Tables 11, 12).

CAI		
Acupuncture-group	8.0 (+/-3.7)	4.2 (+/-2.4)
Control group	6.5 (+/-3.4)	4.8 (+/-3.9)
General well being:		
Acupuncture-group	3.0 (+/-1.8)	1.8 (+/-1.0)
Control group	3.2 (+/-1.9)	2.2 (+/-1.7)
Quality of life		
Acupuncture-group	146 (+/-23)	182 (+/-18)
Control group	157 (+/-20)	183 (+/-23)

Table 11: Treatment Results CAI / General well being / QOL

	Before treatment	**Post-treatment**	**p-value**	**Follow-up**	**p-value**
CAI					
TCM group	8.0+/-3.4	4.2+/-2.4	0.048	3.7+/-2.5	0.390
Control group	6.5+/-3.2	4.8+/-3.9*		4.6+/-3.2	
IBDQ					
TCM group	146+/-23	182+/-18	0.065	168+/-28	0.379
Control group	157+/-20	183+/-23		178+/-15	
VAS					
TCM group	3.0+/-1.8	1.8+/-1.0	0.980	2.1+/-1.9	0.913
Control group	3.2+/-1.9	2.2+/-1.7		2.9+/-2.1	

Table 12: Treatment Results CAI / IBDQ / VAS

The collected parameters “General well being” and “Quality of life” are not allowed to demonstrate statistical differences between both groups of treatment. Moreover the results have shown a positive therapeutic effect of traditional acupuncture as well as sham acupuncture for patients with mild to moderately active UC (23).

In a study of Rohrböck, Hammer et al., performed in 2004 (39) acupuncture treatment in patients with Irritable Bowel Syndrome (IBS) and healthy participants was tested. As the discomforts of IBS among the rectal area were similar to those of IBD, this disease was included.

The therapeutic approach followed on the influence of perception. There were measured rectal tone, elastance and sensory thresholds for rectal distension in

healthy subjects (n=12; 8 male, 4 female) and in patients with IBS (n=9; 9 female). The mean age ranged from 34.0 + / - 11.4 years. Participants were recruited by public advertisement.

Patients with IBS suffered from rectal symptoms with abnormal stool passage, straining, fecal urgency, and the feeling of incomplete evacuation (39, 24).

48 hours before study entry patients were required to discontinue any medication that was considered to influence gastrointestinal motility or perception. The rectal tone was measured with the distal bag using the barostat, set in a pressure controlled mode.

The proximal bag of the tube assembly was kept deflated. Before start, of each distension, the bags were emptied completely. Volume controlled, stepwise rectal distension (20 ml / step) was performed, with inflation periods separated by observation periods. The inflation rate was 20 ml per 10 s; followed by a 50 s observation period.

The following acupuncture points were selected for treatment on both sides of the spina: UB 27, UB 30, UB 25. The points are located in the dermatomal segments S 3 and S 4. Electroacupuncture and sham acupuncture were applied. Participants were not informed which acupuncture group to be associated. The results didn't show differences between electroacupuncture and sham acupuncture for the parameters elastance, rectal tone, and perception.

In conclusion the study offered acupuncture to have a placebo effect on the rectal perception. An influence of acupuncture treatment to distensibility of the rectum and the visceral area was not able to be proven.

The purpose of the following report was to assess the evidence for effectiveness of acupuncture treatment in gastrointestinal diseases. In the year 2007 Schneider et al. (3) published clinical trials of acupuncture for gastrointestinal disorders. In this work we will only deal with the studies of acupuncture treatment for CD and UC. Using the MEDLINE database (up to May 2006) a literature search was conducted, using the keywords "Gastrointestinal diseases" and "Acupuncture". The search was limited to clinical trials. The bibliographies of all review articles and all included studies were manually searched to identify other potential studies. Since there are less randomized studies on this topic, also results about clinical examinations took place in this report.

A standardization of acupuncture treatment corresponding to professional and technical parameters must be a postulation for the future. As the acupuncturist always has knowledge whether there is used traditional or sham acupuncture, it will be impossible to perform double blind studies with acupuncture. The modality using sham acupuncture opens a scope referring use of species of needles, technique of needling and the choice of non-acupuncture points.

The quality of method was determined by the following criteria: The existence of a control group, randomization, anonymity of patients, and evaluators, statistics protocol, description of drop–outs, and an a priori definition of primary and secondary outcomes. Only four of the edited studies complied the quality criteria.

Disease	Reference	Study Design	Treatment	n	Duration of treatment	Primary outcome	Results
Irritable bowel syndrome	Schneider et al,2005	RCTlongitudinal evaluation	Standart AC vs np-SAC at non AP-points	22 AC21 SHAM	10 sessions2sessionsper week	Quality of life	↑ in both groups no significant group difference
Ulcerative colitis	Joos et al, 2006	RCT	Individual AC vs p-SAC	15 AC14 SHAM	10 sessions over a period of 5 wk, follow up 16 wk	PO:Colitis Activity Index(CAI)SO: quality of life, general well-being	↑ AC superior to p-SACrelated to PO↑ in both groups fpr PO and SO no significant group difference for SO
Crohn´s disease	Joos et al, 2004	RCT	Individual vs p-SAC	27 AC24 SHAM	20 sessions over a period of 4 wk, follow up 12 wk	PO:Chrohn´s Disease Activity Index (CDAI)SO:quality of life, general well-being	↑ AC superior to p_SAC related to PONo significant group difference for SO↑ in both groups for PO and SO

Table 13: Studies

In four studies, outcomes of acupuncture treatment in patients with IBD were documented. Even these studies didn't comply exhaustive quality criteria.

The subjective parameters "Quality of life" (QoL) signed positive effects in the acupuncture group as well as in the placebo group. In the acupuncture group the inflammatory parameters CAI and CDI decreased significantly in comparison to the control group (22, 23).

5 Discussion

IBD represent for patients a major challenge and often a long way of suffering. The complaint pictures of CD and UC show similarities in the clinical course and in the prognosis, therefore an appropriate care in confirming the diagnosis is an essential one.

As both diseases are manifested in a lymphocytic embossed, chronic destructive inflammation, in most cases of disease specific differential diagnoses and biopsies from the inflamed areas of the gastrointestinal tract are providing reliable results. Confirming the diagnosis several months or even years are lapsing.

This situation means for patients not only a dramatic limitation of their quality of life due to the severity and the course of their disease, but also psychological and social isolation until finding the appropriate therapeutic algorithm.

Etiology and pathogenesis of IBD are unknown to date - a very dissatisfying situation for patients accounting for the fact, that the first clinical descriptions of disease type are documented in the 18th century (Morgagni, 1761). The publications of Samuel Wilks (UC, 1859) (53), and Crohn, Ginzburg and Oppenheimer (CD, 1932) (12), are representing the base for the exploration of these clinical pictures up to now.

A multivarious genesis is obtained to be secured. This complexness is complicating appropriate therapeutic approaches. In the recent decades, corticosteroids and antibiotics were the medication of choice. Today, immunosupressants and cytostatics as “inhibitors” of the multiple inflammatory processes are available additionally. Although treatment algorithms are individually modulated, a limitation of medical facilities is shown additionally afflicting patients.

Surgical interventions must be executed at the point of view of appropriate therapeutic indications, not taking the expected success of treatment for patients, but primarily only to prevent a dramatic or even life threatening condition.

This unsatisfactory situation from a “school medicine’s” perspective leads many patients requiring alternative treatment methods. A well established and most popular alternative medical method is acupuncture.

The results of the literature research were not in accordance to our expectations because of the low number of studies. There are only a few studies covering this topic fulfilling the criteria of a randomized single blind study.

Double blind studies are extremely difficult to set up, as the acupuncturist always has to know whether to needle active or sham acupuncture points.

As a notable finding in the first study by Joos et al. (22) appears, that in the acupuncture group men and women showed comparable positive reactions, whereas the results of men in the control group could not prove positive effects in treatment. One possible explanation might be men in comparison to women having fewer reactions on placebo effects. However, this finding should be substantiated in further studies targeting on this issue.

Up to a disease duration of five years the most intensive effects were documented in the acupuncture group. Patients with a higher CDAI at the beginning of treatment had a better response to acupuncture than patients with lower CDAI.

The number of patients in each subgroup (gender, disease duration, medication) was very low, therefore some issues did not provide reliable conclusions. If a statistical analysis of subgroups – gender, disease duration, medication, acupuncturists – will provide additional information, further studies have to be planned with the according power to detect the differences. In the here presented studies, an analysis of subgroups gained no significant results regarding the effectiveness of acupuncture in IBD.

Unwanted side effects that are directly related to the acupuncture treatment were not experienced.

Acupuncture treatment being able to surrogate or to drop standard medications has to be tested and clarified in further studies.

TCM applies to the clinical picture IBD the term “wet hot diarrhea”. In this context, a Liver-Qi-Stagnation and Kidney Emptiness are discussed. The images associated to these acupuncture points are a possible proposal and shall be evaluated in further studies.

The presented studies have provided similar results: Acupuncture treatment according to the rules of TCM showed a significant decrease of activity of inflammation in CD and UC. For the clinically characteristic parameters in IBD there is documented no positive effectiveness in the studies corresponding to acupuncture treatment.

All patients fulfilling the study criteria during the study period confirmed an improvement in their quality of life. This improvement of quality of life is of special importance for patients suffering from IBD. The results of acupuncture treatment after TCM showed clearly positive effects on the psychosocial spheres.

Despite increasing incidence rates of IBD in the developed countries, diseases corresponding to the gastrointestinal tract are subject to be tabooed in society.

This fact is enhancing an additional stress factor for IBD-patients.

The supply situation for patients with IBD is an unsatisfactory one. Specialists in internal medicine and surgery, responsible in IBD, are available only in large medical centres or University hospitals. The waiting times for appointments contacting a specialist last several weeks on average. From the onset of initial symptoms to diagnosis several months or even years are lapsing, characterized by chronic discomforts, and patients driving into isolation just at this time.

Health economic data to IBD from Austria are not available. International studies suggest that indirect costs are surpassing direct cost significantly. In Germany at last direct costs on average for 4 weeks illness were published with an amount of 506,43 EUR; indirect costs with an amount of 918,43EUR (Univ. Prof. Dr. W. Reinisch; Med. Univ. Wien; Universum Innere Medizin 02/08).

In Austria, the payment of acupuncture treatments by statutory health insurances is not regulated yet. Although therapeutic success was demonstrated, a statutory provision is lacking. At the time one may pay from 15 to 85 EUR for one acupuncture treatment (verbal information) in Austria.

For many years a violent discussion about increasing costs of drugs is in progress. Opposite to this situation acupuncture is a cost efficient method to treat patients with defined clinic symptoms favouring with acupuncture treatment. Another argument favouring acupuncture treatment is to recommend a therapeutic method without side effects.

The acupuncture treatment according to TCM improved the subjective perception, and increased the quality of life of patients suffering from IBD. An improvement in the quality of life signifies more integration, more communication, professional ability and physical activity. These criteria in turn, reduce the so called indirect costs.

For patients with IBD, acupuncture treatment according to TCM can be recommended as a supportive therapy. Whether acupuncture is able to substitute medication shall be addressed by further studies in future.
Increasing the acceptance of affected patients, the diagnostic and therapeutic responsibility of specialists and acupuncturists, must be improved. Societal acceptance and a full scale establishment of alternative healing methods in accordance to the rules of TCM represent a challenge for the future.

"Per aspera ad astra!" (Seneca) - "Due to rough ways to the stars" – must not be the “Main Theme” or the “Pain Theme” for IBD patients in future.

List of abbreviations

CAM ..... Complementary and alternative Medicine
CD ..... Crohn's Disease
CDAI ..... Crohn´s Disease Activity Index
CED ..... chronisch entzündliche Darmerkrankung
CRP ..... C – reactive protein
DU ..... Governing Meridian
GB ..... Gall Bladder Meridian
H ..... Heart Meridian
IBD ..... Inflammatory Bowel Diseases
IBDQ ..... Inflammatory Bowel Disease Questionaire
IBS ..... Irritable Bowel Syndrome
K ..... Kidney Meridian
LI ..... Large Intestine Meridian
LIV ..... Liver Meridian
LKH ..... Landeskrankenhaus
LU ..... Lung Meridian
P ..... Pericardium Meridian
QoL ..... Quality of Life
REN ..... Directing Meridian
SI ..... Small Intestine Meridian
SJ ..... Triple Burner Meridian
SP ..... Spleen Meridian
ST ..... Stomach Meridian
TCM ..... Traditional Chinese Medicine
UB ..... Bladder Meridian
UC ..... Ulcerative Colitis
VAS ..... Visual analog scale
WHO ..... World Health Organization

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