

Preoperative Assessment of Different Treatment Modalities in Bronchial Asthma Patients

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Abstract:

This study was performed to assess the effectiveness of acupuncture and medical therapies of bronchial asthma preoperatively. Sixty patients suffered from mild to moderate bronchial asthma and coming for elective operations were chozen from the outpatient clinic of Al-Zahraa University Hospital. Patients were randomly divided into three equal groups (n=20 each). Group I patients (drug group) received oral theophylline and Salbutamol (ventolin) inhaler according to the needs. Group II patients (drug +ear acupuncture group) received same medical treatment as in group I and added ear acupuncture. Group III patients (drug + ear and body acupuncture group) received same medical treatment as in group I and II and added ear and body acupuncture. Ventilatory function tests through spirometer and interleukin-13 estimation were performed before treatment and after two weeks of treatment. Improvement of subjective and objective parameters had occurred with significant decrease in the mean serum level of interleukin-13 and decrease in the mean number of using b-agonist puffs after two weeks of treatment in the three groups, with the best results being in group III than in group II and then in group I.

Conclusion: Interleukin-13 estimation togheter with ventilatory function tests is a useful parameter for pre-operative assessment and evaluation of asthmatic patients. Also medication was significantly reduced when combined with acupuncture.

Introduction

The American Thoracic Society (1987) defined bronchial asthma as a clinical syndrome characterized by increased responsiveness of tracheo-bronchial tree to a variety of stimuli and manifested by widespread narrowing of the airways that changes in severity either spontaneously or as result of therapy.

Many cells and cellular elements play a role in asthma in particular mast cells, eosinophils, T lymphocytes, macrophges, neutrophils and epithelial cells. Mast cell activation can occur through the crosslinking of high affinity IgE receptors on the cell surface or the interaction of other stimuli such as

neuropeptide substance P with the mast cell membrane Each result in mast cell degeneration and release of its mediators, these mediators are either performed molecule, found within the mast cell granules (histamine, neutral protease and proteoglycans_ or newly generated molecules (prostaglandins, leukotrienes and cytokines)⁽¹⁾ These released inflammatory mediators from mast cells contribute to bronchocons - triction, inflammatory oedema, mucous secretion and activation of secondary effector cells⁽²⁾

Cytokines play an integral role in the coordination and persistence of the inflammatory process in the chronic

inflammation of the airways in asthma since they are capable of inducing many of the pro-inflammatory effects characteristics of their disease⁽³⁾. Not only cytokines involved in maintaining the chronic inflammatory process, they are also responsible for the initiation of the early stage of this process⁽⁴⁾.

Interleukin-13 (IL-13) is a protein produced mainly by activated T lymphocytes and mastocytes in response to antigen specific stimuli IL-13 shows significant consequence and structural homology with IL-4⁽⁵⁾.

Homer et al.⁽⁶⁾ found that IL-13, a key mediator Th2 (T-helper lymphocytes) mediated immunity, contributes to the pathogenesis of asthma and other pulmonary diseases may therefore play a central role in chronic pulmonary conditions in which fibrosis, type II cell hypertrophy and surfactant accumulation occur.

Traditionally acupuncture means stimulation of specific points on the surface of the body in order to produce many regulatory effects on the functions of internal organs. Bronchial asthma is one of the major indications for acupuncture in disorders of internal organs. The selection of proper points has been as important as the correct type of stimulation either reinforcement or sedation⁽⁷⁾.

The objective of the present study was to assess the effectiveness of non traditional (acupuncture) and traditional (medical treatment) therapies of bronchial asthma to decrease side effects complications and cost of management.

Patients and Methods

After approval of the Local Ethics Committee, informed written consents were obtained from 60 patients of both sexes, aged between 25-65 years, suffered from mild to moderate bronchial asthma (ASA I, II) and

coming for elective operation at outpatient clinic of Al-Zahraa University Hospital.

Mild asthmatics were selected by history taking (day time symptoms greater than twice per week but less than once per day and or night time symptoms greater than twice per month and FEV1>80% of normal). Moderate asthmatics were selected by history taking (day time symptoms or night time symptoms more than once per day, FEV1 is > 60% but <80% of normal)

Exclusion criteria included patients with severe bronchial asthma (continual daily symptoms or frequent night time symptoms and FEV1 is <60% of normal), patients who were smokers or who had dusty jobs, patients who had chest infection or general medical problems.

Patients were randomly divided into three equal groups (n=20 each).

Group I patients (drug group) patients were treated by oral theophylline 5-10 mg/Kg/day) tablets in divided doses orally/12 hours, In addition to salbutamol (ventolin) inhaler 0.1mg/puff during attacks as needed the treatment continued for 2 weeks.

Group II patients (drug +ear acupuncture group) were treated by same medical treatment as in group I and added ear acupuncture. The following ear 3 points are used (Fig. 1).

1. Shenman point (ear point 55) to decrease excitation.
2. Lung point (ear point 101) to produce bronchodilatation
3. Dingchuan point (ear point 31) soothing or calming asthma.

The auricle was disinfected, permanent disposable sterile press steel acupuncture needles (0.22 mm x 1.5 mm) were fixed with sticking plaster in one ear for one week and then another needles were fixed in the other ear for

the second week. The patients were asked to press each of the points themselves 3 times a day, with a pulsating movement of the index finger.

Group III patients (drug + ear and body acupuncture group) were treated by same medical treatment as in group I, II and added ear and body acupuncture. Ear acupuncture method as before. Body acupuncture method as follows.

The body points used were:

1. Baihui (Du 20)⁽⁹⁾ Fig. (2):
The best tranquilizing and sedative point of the body.

Location: On the vertex of the skull 5 cun (Chinese inch) behind the anterior hairline in the midline.

2. Shanzhong (Ren 17)⁽⁹⁾ (Fig. 3): Influential point for the respiratory system.

Location:

On the sternum midway the two nipples at the level of the 4th intercostals space

3. Dingchuan (Ex.17)⁽¹⁰⁾ (Fig. 4)

Location: 0.5 Cun lateral to the mid point between the dorsal spines of the 7th cervical vertebra (vertebral prominence) and the 1st thoracic vertebra.

4. lieque (Lu.7)⁽⁹⁾(Fig. 5)

Location 1.5 Cun (2 finger breadths) from the wrist joint crease on the lateral border of the forearm.

5. Zhongfu (Lu.1)⁽⁹⁾ (Fig.6)

Location: At the level of the interspace between the 1st and 2nd ribs, 6 Cun lateral to the midline. The area was disinfected before puncture with 0.3mmx 30mm) stainless steel disposable acupuncture needles

Shanzhong (Ren 17) point and Zhongfu (Lu1) point were connected to KWD-808 multi purpose health device for electrical stimulation to acupuncture points using the continuous wave. The other 3 points were rotated by thumb and index finger for 5 seconds every setting. (Three settings 20-25 min each per week for 2 weeks)

Methods: Patients were avoided from exercise for one hour before physical examination. Ventilatory function tests, through spirometer (Spirometer 3000) for measurement of FVC and FEV1 (and also the predicted normal value) before the treatment and after 2 weeks of treatment. Blood samples 2ml from every patient at the same day centrifuged for separation of serum within one hour of collection and stored at -20°C (frozen) till collection of the samples from all patients for IL-13 immunoassay (Elisa technique) before the treatment and another sample after 2 weeks.

The data were collected coded and analysed using Statistical Package of Social Science (SPSS). Quantitative data were summarized as mean ± standard deviation (SD) and compared by student-t, ANOVA, LSD multiple comparisons tests and correlation results were expressed as mean ± SD and % change. For all statistical comparisons probability of P ≤ 0.05 was considered significant.

Results

Comparison of means of age (year), body mass index (BMI) (Kg/m²) and duration of illness (year) in different study groups which were insignificant as shown in table (1)

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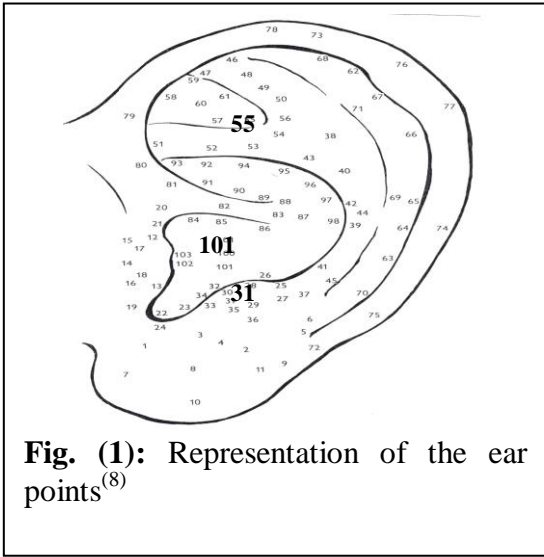


Fig. (1): Representation of the ear points⁽⁸⁾

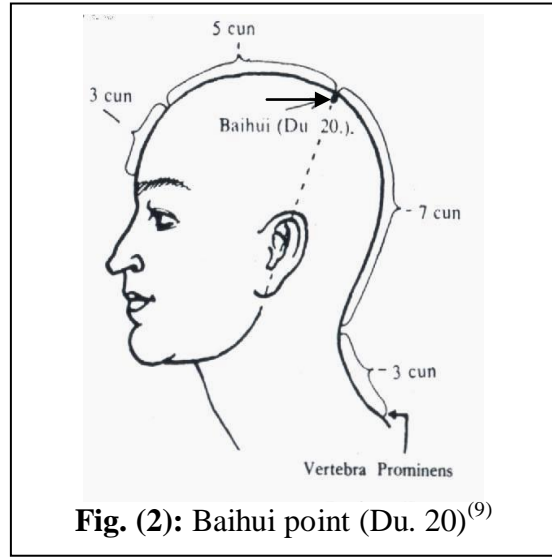


Fig. (2): Baihui point (Du. 20)⁽⁹⁾

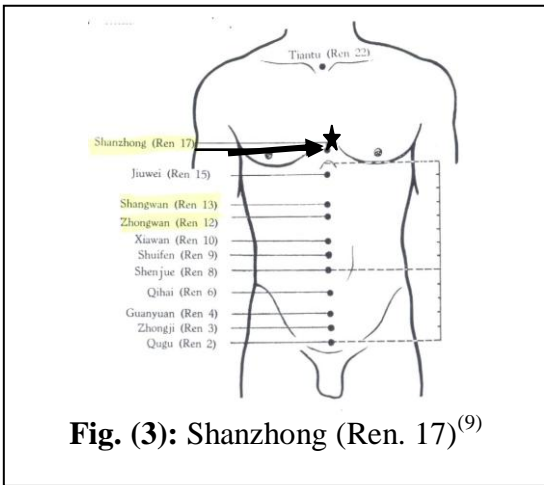


Fig. (3): Shanzhong (Ren. 17)⁽⁹⁾

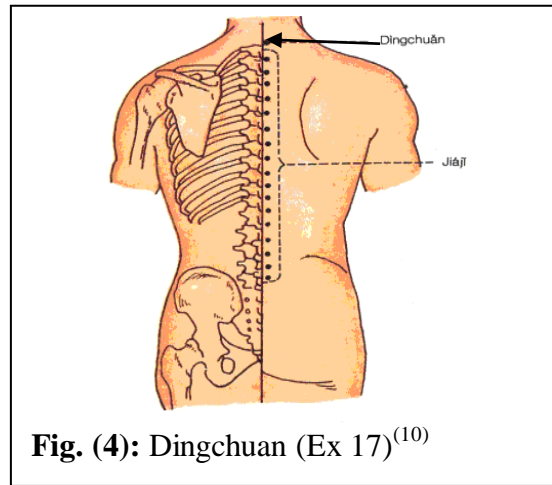


Fig. (4): Dingchuan (Ex 17)⁽¹⁰⁾

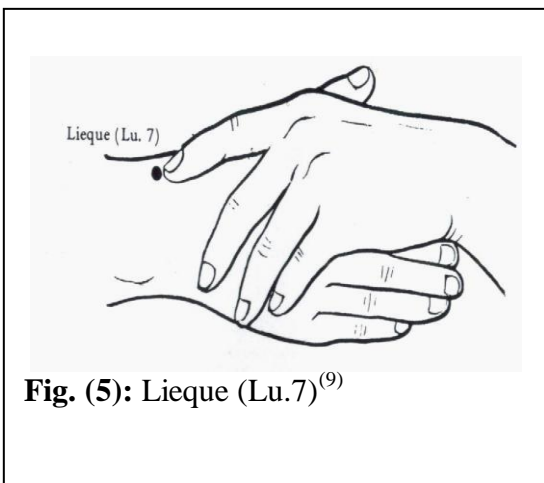


Fig. (5): Lieque (Lu.7)⁽⁹⁾

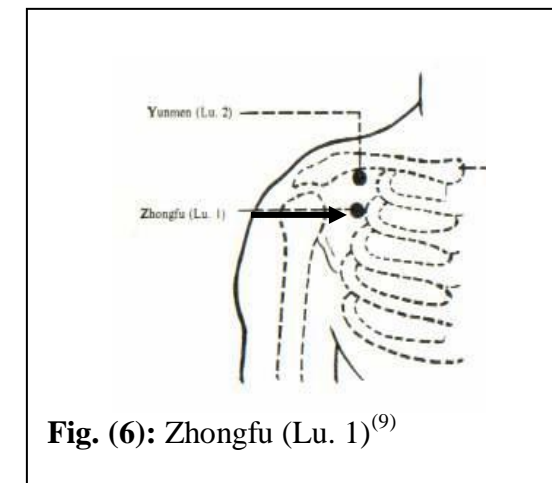


Fig. (6): Zhongfu (Lu. 1)⁽⁹⁾

Table (1): ANOVA to compare mean of age (y), BMI (kg/m2) and duration of illness (y) of different study groups:

Variable	Group	Mean	SD	F-value	P-value
Age (years)	I (n=20)	34.30	10.50	0.45	0.77 (n.s)
	II(n=20)	37.55	12.92		
	III(n=20)	35.12	11.08		
BMI (kg/m2)	I(n=20)	28.81	5.49	0.90	0.47 (n.s)
	II(n=20)	26.61	5		
	III(n=20)	27.25	4.83		
Duration (years)	I(n=20)	9.60	8.35	0.04	0.99 (n.s)
	II(n=20)	9.45	7.86		
	III(n=20)	10.35	8.32		

P≤0.05 is significant ns = non Significant

In the present study, there was % improvement of most symptoms and signs in all groups, after 2 weeks of treatment the best results were in group III as shown in table (2)

Cough had been reduced from 100% (20p) in each of three groups to 25% (5p), 20% (4p) and 15% (3p.) in groups I, II, III respectively.

Expectoration had been reduced from 80% (16 p) in each one of three groups to 25% (5P.), 20% (4p.) and 15%(3P.) in groups I, II, III respectively.

Breathlessness was reduced from 100% (20P.) in each one of three groups to 40% (8 P.), 30% (6 P) and

15% (3 P.) in groups I, II, III respectively.

Wheeze was reduced from 70% (14 P.) to 25% (5 P) in group I and from 70% (14 P.) to 20% (4 p) in group II and from 75% (15 p.) to 15% (3 p) in group III.

Vesicular breathing was reduced from 100% (20P.) in each one of three groups to 30% (6 P.), 20% (4 P.) and 15% (3 P.) in groups I, II, III respectively.

Rhonchi was reduced from 70% (14 P.) to 20% (4 P.) in group I, from 60% (12 P.) to 15% (3 P.) in group II and from 75% (15 P) to 15% (3 P.) in group III.

Table (2): Summary of the number and % of patients with most symptoms and signs before treatment and after 2 weeks of treatment in different study groups (Chi. Square test).

	Group	Time	Symptoms				Signs	
			Cough	Expecto-ration	Breath-lessness	Wheeze	Vesicular Breathing	Rhonchi
No. and % of pts	I	Before	20(100%)	16(80%)	20(100%)	14(70%)	20(100%)	14(70%)
		After	5(25%)	5(25%)	8(40%)	5(25%)	6(30%)	4(20%)
	II	Before	20(100%)	16(80%)	20(100%)	14(70%)	20(100%)	12(60%)
		After	4(20%)	4(20%)	6(30%)	4(20%)	4(20%)	3(15%)
	III	Before	20(100%)	16(80%)	20(100%)	15(75%)	20(100%)	15(75%)
		After	3(15%)	3(15%)	3(15%)	3(15%)	3(15%)	3(15%)
Sig.	X2		0.42	0.4	1.8	0.5	0.87	0.18
	*P		*P>0.05	*P>0.05	*P>0.05	*P>0.05	*P>0.05	*P>0.05

*P = non significant value to compare each group with preoperative value

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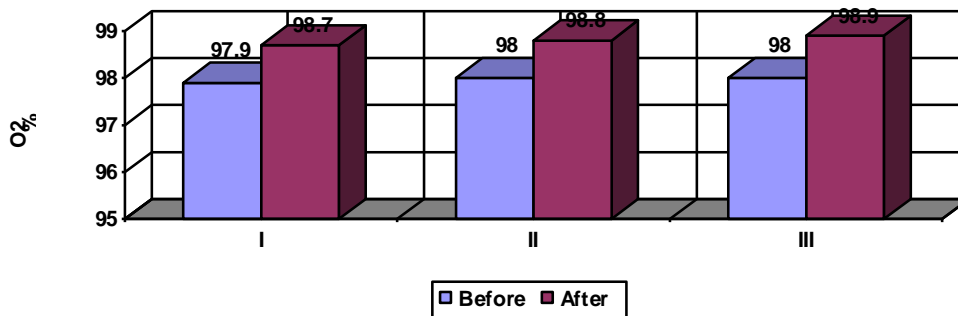
- The results of the mean value of O₂% saturation before treatment and after 2 weeks of treatment showed significant improvement in different study groups. As showed in tab (3) and Fig. (7).

Table (3): There was significant difference between O₂% saturation before and after 2 weeks of treatment in different study groups (paired sample T test)

Group	O ₂ % Before	O ₂ % After	Mean Difference	SD. of Difference	t-value	P-value
I	97.9(0.64)	98.7(0.66)	+0.80	0.77	4.66	0.000*
II	98(0.82)	98.8(0.77)	+0.85	0.81	6.68	0.000*
III	98(0.86)	98.9(1.04)	+0.85	0.67	5.67	0.000*

P<0.05 is significant (*=Significant)

Fig. (7): O₂% saturation before treatment and after 2 weeks of treatment in different study groups



The results of the mean value of FEV₁ (L) and FVC (L) showed marked significant improvement in different study groups.(table 4 &fig 8a)

Table (4): Comparison of mean FEV₁(L) and FVC (L) before treatment and after 2 weeks of treatment (with SD) in different study groups (Paired sample T-test).

Groups	Variable	Before	After	Mean difference	SD. of difference	t-value	P-value
I	FEV ₁ (L)	1.47±0.41	1.93±0.53	±0.46	0.19	10.96	0.000*
II		1.57±0.52	2.2±0.64	±0.24	0.24	11.33	0.000*
III		1.36±0.38	2.08±0.53	±0.72	0.22	14.38	0.000*
I	FVC(L)	2.55±0.64	2.64±0.62	±0.08	0.06	5.96	0.000*
II		2.75±0.77	2.9±0.74	±0.14	0.28	2.27	0.035*
III		2.41±0.57	2.64±0.57	±0.18	0.18	5.46	0.000*

P<0.05 is significant (*=significant)

Fig. (8a): Mean FEV₁(L) before treatment and after 2 weeks of treatment in different study groups.

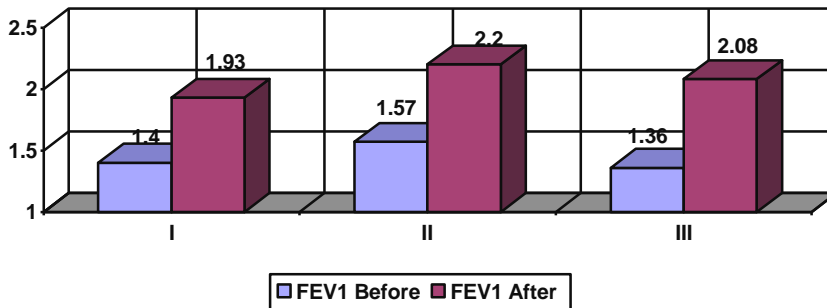
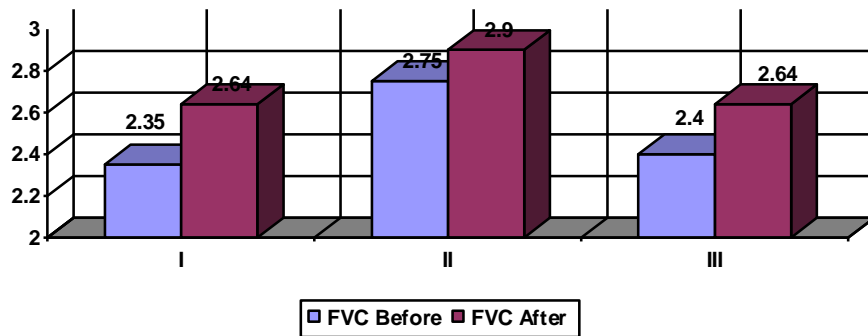


Fig. (8b): Mean FVC (L) before treatment and after 2 weeks of treatment in different study groups.



- The results of the mean value of FEV1% (FEV1/FVCx 100) showed significant improvement in each group of different study groups. The best result of increase of the mean FEV1% after 2 weeks of treatment were in group III which increased from 56.16% to 78.45% (+22.29%, ± SD 5.32). The details were show with % increase and SD in tab. (5) and fig. (9 a,b).

Table (5): Mean FEV1% and % increased (with SD) before treatment and after 2 weeks of treatment in different study groups.

Group	Before	After	% increase ± SD	Confidence interval of Difference	t-value	P-value
I	57.5(3.51)	72.7(6.07)	15.2(5.12)	12.83-17.63	13.29	0.000*
II	56.4(6.07)	75.0(7.21)	18.6(6.01)	15.78-21.40	13.85	0.000*
III	56.2(5.34)	78.5(4.63)	22.3(5.32)	19.82-24.78	18.83	0.000*

Fig. (9a): FEV1% before treatment and after 2 weeks of treatment in different study groups.

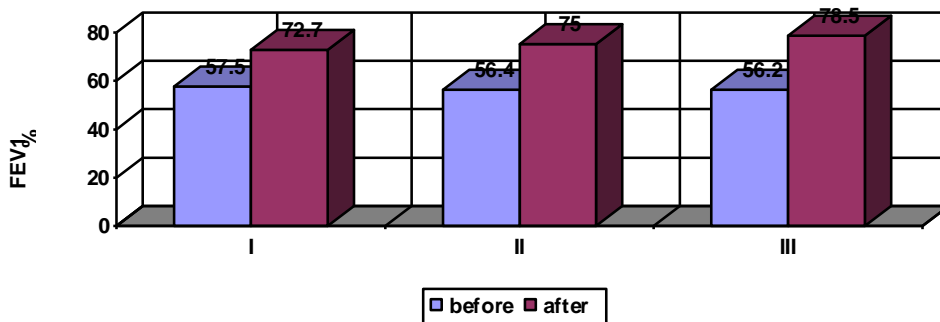
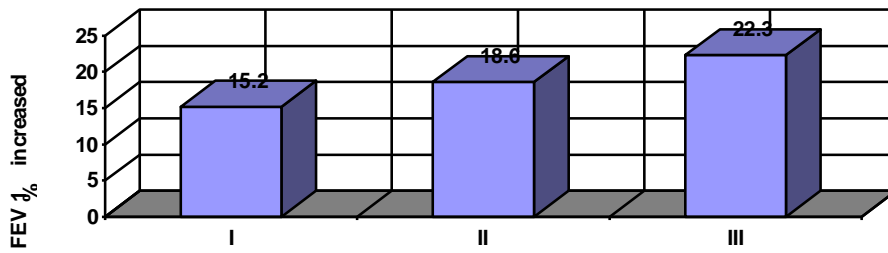


Fig. (9b): Mean FEV1% (increase) in different study groups

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- The mean, value of FEV1% were significantly improved between groups by ANOVA as shown in tab (6a) and also by LSD multiple comparison tests between each group and the others. The details were shown in tab (6 a, b).

Table (6a): ANOVA to compare means of FEV1% increase in different study groups.

Variable	Group	Mean	SD	F-value	P-value
FEV1% (difference)	I	15.22	5.12	9.38	0.000*
	II	18.58	6.01		
	III	22.29	5.32		

P<0.05 is significant (=*=significant)

Table (6b): LSD multiple comparison test to compare FEV1% difference in different study groups.

Group	Comparison group	Mean Difference	P-value
I	II	3.36	0.04*
	III	7.06	0.000*
II	III	3.70	0.03*

P<0.05 is significant (=*=significant)

- The results of the change in the mean level of serum of IL13 (pg/ml) with SD before treatment and after 2 weeks of treatment showed significant decrease (P≤ 0.05) in different study groups as follow: Group I decreased from 2.020 pg/ml (1.371) to 0.267 pg/ml (0.393), Group II was 2.363 pg/ml (1.433) to 0.165 pg/ml (0.321) and Group III was 2.418 pg/ml (2.235) become 0.063 pg/ml (0.208). The best result recorded were in group III and then in group II as shown in tab (7) and (Fig. 10a,b).

Table (7): Paired Sample T-test to compare IL-13 (pg/ml) before treatment and after 2 weeks of treatment in different study groups

Group	Before	After	Mean Difference	SD of Difference	t-value	P-value
I	2.020(1.371)	0.267(0.393)	-1.75	1.29	6.13	0.000*
II	2.363(1.433)	0.165(0.321)	-2.20	1.33	7.37	0.000*
III	2.418(2.235)	0.063(0.208)	-2.35	2.22	4.73	0.000*

P<0.05 is significant (=*=significant)

Fig.(10a): The mean serum level of IL13 (pg/ml) before treatment and after 2 weeks of treatment in different study groups

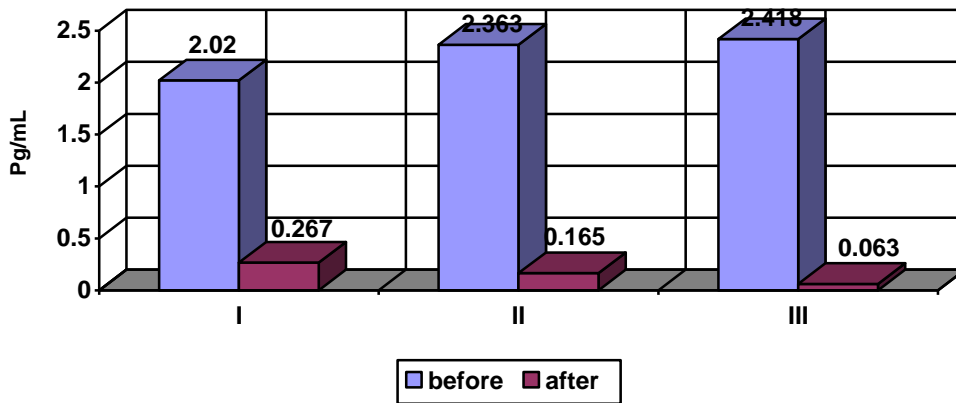
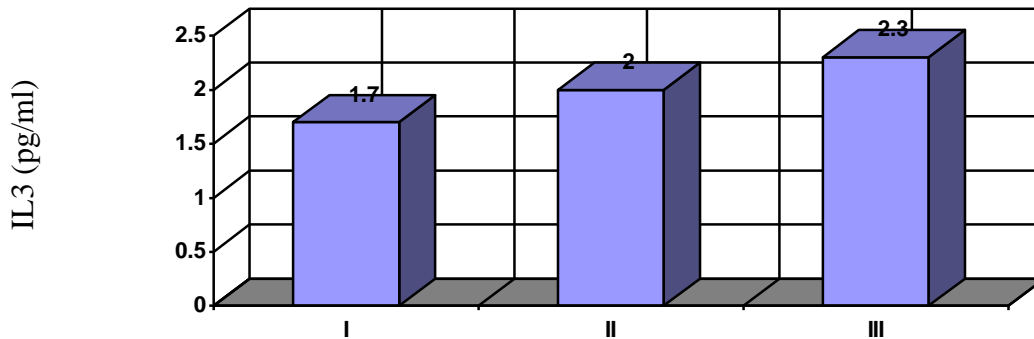


Fig. (10b): Mean difference of decrease in IL13 (pg/ml) in different study groups.



- There was insignificant difference between groups by ANOVA for the mean serum of decrease of IL13 (pg/ml) before treatment and after 2 weeks of treatment in different study groups. The details were shown in table (8).

Table (8): Comparison of means of IL-13 (pg/ml) decreases before treatment and after 2 weeks of treatment in different study groups (Kruskal wall's test).

Variable	Group	Mean	SD	F-value	P-value
IL 13	I (n=20)	1.75	±1.28	0.9	0.4 (ns)
	II(n=20)	2.20	±1.33		
	III(n=20)	2.35	±2.22		

$P \leq 0.05$ is significant ns= nonsignificant

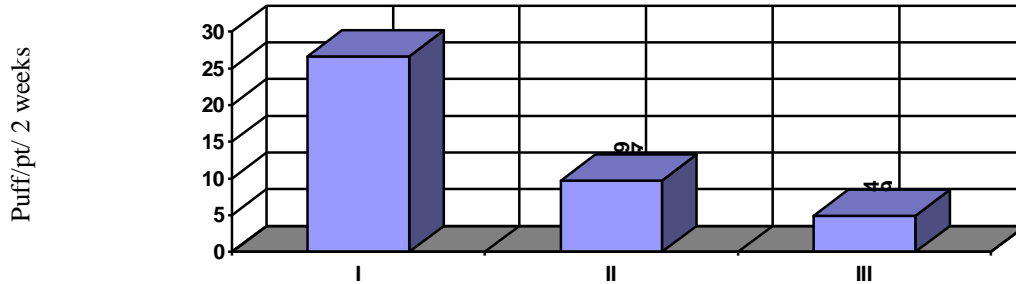
- Comparison of the (mean + SD) of puffs used/patient/2 weeks treatment showed significant difference between the three groups. The best result was in group III, then in group II, then in group I. (table 9, fig 11)

Table (9a): Comparison of mean of number of puff/patient/2 weeks of study groups I, II and III. (ANOVA Test).

Variable	Group	Mean	SD	F-value	P-value
No. Puff/patient/2 weeks	I (n=20)	26.55	8.48	59.50	0.000*
	II(n=20)	9.70	6.73		
	III(n=20)	4.90	3.62		

P<0.05 is significant (*=significant).

Fig. (11): The mean number of puffs used/patient/2 weeks treatment in study groups namely I, II and III.



- Comparison between these groups (I, II and III) by LSD multiple comparison tests for the mean number of difference of puffs used/patient/2weeks showed that there was significant difference between these groups as shown in tab (9b).

Table (9b): LSD Multiple Comparison Test to compare number of puff/patient/ 2 weeks in study groups.

Group	Comparison group	Mean Difference	P-value
I	II	16.85	0.000*
	III	21.65	0.000*
II	III	4.80	0.02*

P<0.05 is significant (*=significant).

- The results of the study showed correlation between the mean FEV1% increased and the mean IL13 (correlation coefficient (R)=less than 1) in the same group and in different study groups before treatment which mean that when FEV1% decrease, serum IL13 (pg/ml) increase (table 10a) fig. (12.a) and after 2 weeks of treatment which mean that when FEV1% increases, serum IL 13 (pg/ml) decrease (table 10b) fig. (12b) There was significant correlation before treatment in different study groups and significant correlation after 2 weeks of treatment in different study groups except in group III.

Table (10a): Correlation between FEV1% and IL 13 before treatment in Different Study Groups.

Group	Correlation coefficient (R)	P-value
I	-0.51	0.02*
II	-0.67	0.001*
III	-0.73	0.000*

P<0.05 is significant (*=significant).

Table (10b): Correlation between FEV1% and IL13 after treatment in different study groups

Group	Correlation coefficient (R)	P-value
I	-0.63	0.003*
II	-0.50	0.02*
III	-0.10	0.68

P≤0.05 is significant (*=significant)

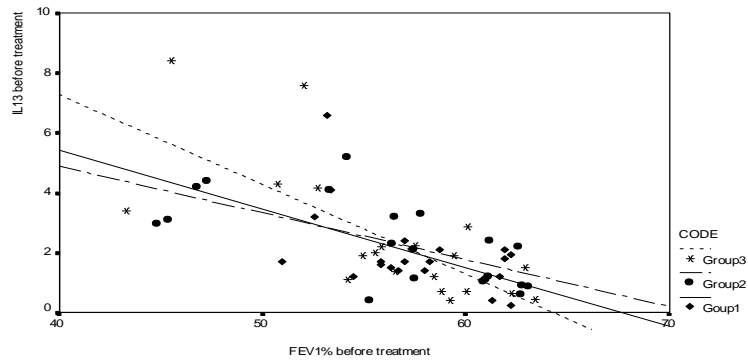


Fig. (12a)

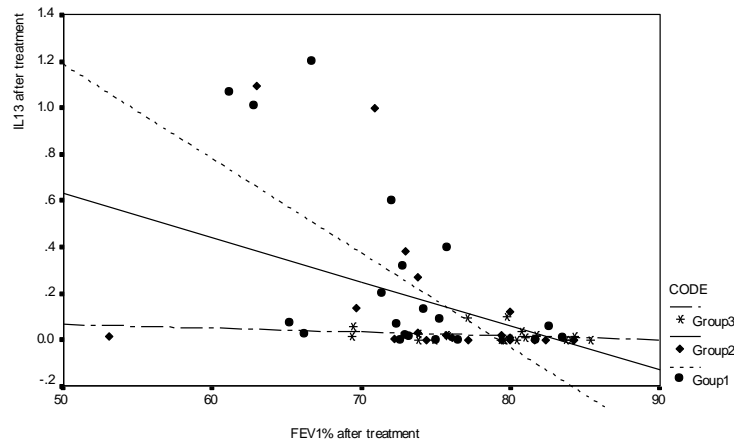


Fig. (12)

Discussion

At present, acupuncture is one of the most popular alternative therapies for asthma, and with the help of competent practitioners, it will be readily available in major population centers.

In the present study, percentage improvement of subjective parameters had been occurred in all groups. In group I cough had been reduced from 100% to 25%, expectoration had been reduced from 80% to 25%, breathlessness had been reduced from 100% to 40%, and wheeze had been reduced from 70% to 25%. In group III, cough

showed a decrease from 100% to 15%, expectoration decreased from 80% to 15%, breathlessness decreased from 100% to 15% and wheeze decreased from 75% to 15%.

Objective parameters showed another improvement, Group I; vesicular breathing had dropped from 100% to 30% and rhonchi had dropped from 70% to 20% and in group III, vesicular breathing had dropped from 100% to 15% and rhonchi had dropped from 75% to 15%. These parameters showed best results in group III, denoting that

combination of bronchodilator and acupuncture effect were superior to ear acupuncture and/or bronchodilator alone and gave the best results.

There was also significant improvement in ventilatory function tests in all groups as FEV1% was increased in group I, 15.2%, group II 18.6% and in group III 22.3%) with better quality of life in all groups and also decrease the number of using B-agonist (Puffs) within the period of the treatment in combined groups, the best results were in group III (4.9 puffs /2 weeks).

These results are in agreement with Zang⁽¹¹⁾ who studied 192 patients suffering from bronchial asthma, all of them were treated by acupuncture on Kongzui (Lu6) and Yuji (Lu10). The results revealed that there was 98.9% total effective rate of clinical remission plus marked subjective improvement in 76.5% of cases who were treated by acupuncture. The Zang⁽¹¹⁾ found also that acupuncture treatment of bronchial asthma was considered very effective for those patients who have a history of drug allergy and also that the asthmatic symptoms in most of patients began to be improved after several acupuncture treatments with the dosage of the gradually reduced.

In our study many patients improved after the first setting. This may be due to that we used 5 somatic points in 3 settings/week for 2 weeks instead of 2 points used in Zang⁽¹¹⁾ study. Adding ear acupuncture points (used 3-4 times/day) in our study gave better satisfactory and fast results.

Medici⁽¹²⁾ discussed many published studies on acupuncture and asthma. From these studies it emerges that short term effects of acupuncture are better documented than long term ones. Our study done within 2 weeks which was enough time for preoperative assess -

ment of bronchial asthma and gave satisfactory results.

However, a study carried out by Joshi⁽¹³⁾ suggested that acupuncture causes significant subjective improvement with special respect to dyspnea, frequency, duration and severity of asthmatic attacks, with modest improvement in objective parameter. Acupuncture has no role in treating acute attacks since it had weak bronchodilator effect, but it has an excellent prophylactic effect in the long run. But in our study we used a short course of treatment (2 weeks) for preoperative assessment for mild to moderate asthma.

Alekandrova⁽¹⁴⁾ showed that treatment effects reached in 94 patients with bronchial asthma demonstrated that neurogenic, humoral and bioenergetics responses to acupuncture result in reduction of bronchial hyporeactivity.

Pharmacologic treatment tended to have a greater effect than acupuncture alone. However, medication was significantly reduced when combined with acupuncture. As our study, medication was significantly reduced when combined with acupuncture (the mean number of puffs used/patient/2 weeks in group I was 26.6, in group II was 9.7 and in group III was 4.9). Jobst concluded that although more well-designed studies are needed, there is no reason to withhold acupuncture treatment from patients with bronchial asthma and chronic obstructive lung disease⁽¹⁵⁾.

A review by *Helms*⁽¹⁶⁾ discussed 16 controlled studies; 9 studies concluded that acupuncture is more effective than sham needling.

In a retrospective study 17 patients with long-standing history of asthma bronchiale were treated with acupuncture at the outpatient unit of the Department of Anaesthesia and inten -

sive care in the university Hospital of Vienna Austria, *Zwolfer et al.*⁽¹⁷⁾ revealed that over 70% of patients with long-standing asthma reported a significant improvement of their ailment after 10 weeks of acupuncture treatment.

In the present study, we estimate the level of serum IL13 (Pg/ml) before treatment and after 2 weeks of treatment as the target for the severity of bronchial asthma; there was a decrease in the level of serum (IL13 Pg/ml) in the serum of blood of the patients after 2 weeks of treatment in all groups as follows, in group I decreased from 2.02 to 0.267, group II decreased from 2.363 to 0.165 and group III decreased from 2.418 to 0.063. The best result was decrease in the level of serum IL13 (Pg/ml) in group III and in group II. These results supported by many researches.

Naseer et al.⁽¹⁸⁾ found that an increase in expression of interleukin 13 mRNA has been reported in the airway mucosal in patients with atopic and non-atopic asthma. In addition, levels of IL13 together with IL4 increased following segmental allergen challenge of patients with asthma.

Levy et al.⁽¹⁹⁾ suggest that, in atopy, effector T-cells provide contact-dependent activation signals to B-cells, and that these cells may induce IgE switching largely via secretion of IL13.

Yang et al.⁽²⁰⁾ found that significantly decreased concentrations of serum IgA and total IgA (in saliva and in nasal secretion) and the level of IgE in sera after acupuncture treatment and that attacks of delayed and immediate allergic asthma could be effectively inhibited by acupuncture. However, the theory means little to a patient in the middle of an asthma attack.

Van der Pouw Kraan et al.⁽²¹⁾ Their results indicate that, at least in

vitro, IgE production in allergic asthma patients is more dependent on IL13 than in non-atopics, due to enhanced IL13 production and to enhanced IgE in response to IL13.

Wills-Karp et al.⁽²²⁾ founded that IL-13 is critical to allergen-induced asthma patients and non-atopic controls, T-cells were polyclonally stimulated to obtain IL4, IL13 and subsequently IgE secretion, their results indicate that, at least in vitro, IgE production in allergic asthma patients is more dependent on IL13 than in non-atopics, due to enhanced IL13 production and to enhanced IgE in response to IL13 and that IL13 induces the pathophysiological features of asthma in a manner that is independent of immunoglobulin E and eosinophils.

Li et al.⁽²³⁾ studied the effects of T helper (Th2) cells cytokines on chemokine expression in the lung and IL13 potently induces eotaxin expression by airway epithelial cells. Their study suggests that IL13 is an important mediator in the pathogenesis of asthma and therefore a potential target for asthma therapy.

In our study, side effects and complications of using acupuncture were nil. This may be due to that we explained and informed the patients and their relatives about the value of this work with reassurance during the setting and the use of stainless steel disposable acupuncture needles also we found that Egyptian patients were cooperative with acupuncture maneuvers.

Jobst⁽²⁴⁾ has catalogued the side effects of acupuncture used in the treatment of asthma on the basis of reports from 16 published studies involving a total of 320 cases. Side effects were reported in only 23 (7%) of the 320 cases, and these have generally been mild (e.g. vasovagal attacks, earache and gastro-intestinal symptoms)

indicating that acupuncture therapy for asthma is generally safe. On the other hand, 5 cases of pneumothorax and one case of cardiac tamponade have been reported.

In conclusion: acupuncture is best reserved as an optional form of therapy that complements, rather than replaces conventional therapeutic modalities of proven effectiveness and also because nearly risk-free, relatively low-cost, non pharmacologic form of treatment. There is no reason to withhold acupuncture as a preoperative assessment for patients with bronchial asthma. But more controlled research is necessary for better understanding the range of its clinical application. Interleukin 13 can be used as important indicator for improving bronchial asthma preoperatively with other ventilatory function tests.

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تقييم طرق العلاج المختلفة قبل العمليات الجراحية في مرضى الربو الشعبي

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الربو الشعبي هو اعتلال يختص بشكوى متكررة من الكحة وضيق الصدر والتنفس خصوصاً أثناء الليل وفي الصباح الباكر. وقد نجح الصينيون قديماً في علاج الربو الشعبي عن طريق الوخز بالإبر وأصبح استعمالها لهذا الغرض في تزايد دولي. الوخز بالإبر عبارة عن إدخال إبر رفيعة بالجلد في أماكن محددة لتنظيم سريان الطاقة والتي يعتقد بأنها تنظم الوظائف النفسية والفسيوولوجية.

هدف هذه الدراسة هو تقييم حالات مرض الربو الشعبي قبل إجراء العمليات الجراحية عن طريق العلاج بالعقاقير الطبية وغيرها لتقليل الأعراض الجانبية والمضاعفات وكذلك تخفيض نفقات العلاج من مرضى العيادات الخارجية بمستشفى الزهراء الجامعي لتقييمهم قبل إجراء العمليات الجراحية.

أجريت هذه الدراسة على ستين مريضاً يعانون من ربو شعبي بسيط إلى متوسط تم تقسيمهم عشوائياً إلى ثلاث مجموعات.

المجموعة الأولى: وتشمل عشرين مريضاً تم علاجهم عن طريق استخدام عقاقير موسعات الشعب الهوائية بالفم بالإضافة إلى استخدام البخاخة (الاستنشاق) حسب احتياج المريض.

المجموعة الثانية: وتشمل عشرين مريضاً تم علاجهم عن طريق الوخز بالإبر بالإضافة إلى العقاقير الطبية (مثل المجموعة الأولى).

المجموعة الثالثة: وتشمل عشرين مريضاً تم علاجهم عن طريق الوخز بالأذن والجسم بالإضافة إلى العقاقير الطبية مثل (المجموعة الأولى).

وبمقارنة المجموعات الثلاثة وجد أنها متشابهة وليست ذات دلالة إحصائية بالنسبة لمتوسط الأعمار والأوزان والأطوال والتاريخ المرضي.

أثبتت نتائج هذه الدراسة أن هناك تحسن ملحوظ في شكوى المرضى من حيث الكحة والبلغم وصعوبة التنفس وكذلك في اختبارات التنفس وكانت أفضل النتائج في المجموعة الثالثة الخاصة بالعلاج المزدوج ثم المجموعة الثانية.

أثبتت نتائج هذه الدراسة أيضاً أن نسبة التحسن المنوية في قياس قوة إخراج حجم الهواء في الثانية الأولى ذات دلالة إحصائية في كل المجموعات بعد أسبوعين من العلاج وكانت النتائج كالتالي:

- تحسن بالمجموعة الأولى من 57.5% إلى 72.7% بزيادة قدرها 15.2%.

- تحسن بالمجموعة الثانية من 56.4% إلى 75% بزيادة قدرها 18.6%.

- تحسن بالمجموعة الثالثة من 56.2% إلى 78.5% بزيادة قدرها 22.3%
كما أثبتت نتائج هذه الدراسة انخفاض نسبة السيتوكاين 13 بالدم (بيكوجرام/مل) بعد أسبوعين من العلاج في جميع المجموعات وكانت النتائج ذات دلالة إحصائية كالآتي:

- انخفضت بالمجموعة الأولى من 2.02 إلى 0.267.
- انخفضت بالمجموعة الثانية من 2.363 إلى 0.165.
- انخفضت بالمجموعة الثالثة من 2.418 إلى 0.063.
كما دلت الدراسة أيضاً على انخفاض عدد مرات استنشاق موسعات الشعب الهوائية بالمجموعتين الثالثة والثانية عن المجموعة الأولى خلال فترة أسبوعين العلاج وكانت النتائج كالآتي:

- المجموعة الأولى 26.6 مرة خلال الأسبوعين.
- المجموعة الثانية 9.7 مرة خلال الأسبوعين.
- المجموعة الثالثة 4.9 مرة خلال الأسبوعين.
وتدل نتائج البحث على أن العلاج بالعقاقير الطبية أفضل من العلاج بالوخز بالإبر ولكن العلاج المزيج أعطى أفضل النتائج. ويعتبر تقدير نسبة السيتوكاين 13 بالدم مفيداً في تقييم حالات المرضى بالربو الشعبي قبل العمليات الجراحية مع اختبارات التنفس.

ولذلك فإنه لا يوجد مانع من استعمال الوخز بالإبر كعلاج مكمل للعلاج بالعقاقير الطبية وفي تقييم حالات الربو الشعبي قبل العمليات الجراحية حيث أنه يقلل من نسبة استعمالها وبالتالي يؤدي إلى انخفاض نسبة الأعراض الجانبية والمضاعفات وكذلك تخفيض نفقات العلاج.