LYMPHOMYOSOT® AND ALPHA LIPOIC ACID

Possibilities for a Lymph Therapy with Diabetic Polyneuropathy

Matrix therapy with type II diabetes - a practice-based study • Reprint from Biologische Medizin, Vol 1, February 2000

SUMMARY

This study is based on the observation of 90 outpatients with diabetes mellitus type II. Fifty patients received Lymphomyosot, at the dosage of 15 drops twice a day, and 10 patients received in addition alpha lipoic acid, 10 infusions in each case. The control group consisted of 30 patients who only received 10 infusions of alpha lipoic acid in each case. Under therapy with Lymphomyosot the following results were obtained: 1. an improvement of sensitivity, 2. improved utilization of the alpha lipoic acid, 3. near cessation of pain. The study period was 8 months.

Color sonography and in selected cases nuclear magnetic angiography were used for the diagnosis of vascular lesions. During the early stage of polyneuropathy, in addition to an impairment of sensitivity, edema of the lower legs could be detected before any vascular lesions. Sensitivity tests according to Rydell and Seifer showed that by administering Lymphomyosot drops an improvement was obtained in all cases, sometimes up to more than 4/8 on the scale. Patients who additionally received intravenous alpha lipoic acid infusions showed an improvement in sensitivity in the range 5/8 - 6/8 on the scale.

Keywords: alpha lipoic acid, antihomotoxic therapy, diabetes mellitus type II, diabetic polyneuropathy, homeopathy, Lymphomyosot, edema, matrix metabolic disorder.

INTRODUCTION

Among diabetics, the supplying and removal processes for cells are considerably restricted since the paths between the blood vessels and the lymph vessels on the one hand and the destination organ (nerve cell) on the other hand are impaired through non-enzymatic glucosization processes in the matrix (basic substance) [3,7]. Therefore, the objective of the therapy must be to make the matrix - as a molecular sieve - as permeable as possible and in addition to optimize the functionality of the lymph system. Once the ion-exchange and filter function of the matrix no longer adequately protects the cell from contaminants and as soon as the cell can no longer be adequately nourished, a stagewise change to the control system takes place until finally the loss of the regulatory and communicative capabilities leads to sensibility disruptions.

In general with diabetic polyneuropathy and with the diabetic foot, parasympathetic functions appear to be disrupted earlier and more clearly than sympathetic ones. It is possible that both parts of the autonomous neural system are affected to an equal degree, although the test processes for the parasympathetic functions are more sensitive and disruptions of these can be detected at an earlier stage. In particular in the early stages of autonomous neuropathy one finds not only hypofunctioning of the autonomous systems but also - at least temporarily - hyperfunctioning. The prime cause for this is the development of a "denervating hypersensibility" of the receptors and the basoreceptors, or as the case may be, of the terminal organs and sweat glands [19].

Dry, brittle skin in the region of the feet and on the hands is a clear indication of hypofunctioning of the sympathetic neural system. The absence of dermographia also indicates reduced sympathetic-vasomotorial processes. Hot feet with a marked circulation of blood, in which the veins of the back of the legs collapse inadequately when the feet are raised, are an important indication for severe sympathetic denervation of the vascular path with deleterious effects for the development of the diabetic foot. As is known, this stasis causes chronic inflammation and leads to a reduction of the vibration volume, to neuropathic foot ulcers, and even infected neuropathic gangrene.

Pathognomic for diabetes mellitus is the increased level of glucose in the blood. When this level exists for an extended period of time, e.g., with poor setting of the blood sugar level, a dysbalance of the structural elements of the matrix comes about (including non-enzymatic glucosization).

According to present knowledge, the matrix is composed primarily of fiber proteins (including collagen and elastin), which are embedded in a hydralized polysaccharide gel of proteoglycans and glucosaminoglycans (PG/GAG) [7]. As a result of their charge and structure, proteoglycans and glucosaminoglycans can bind water very well, so that one single proteoglycans molecule can take up a very much larger amount of space than one would expect from its molecular weight. As a result, the extracellular fluid space with its gel-like structure also determines to a significant extent the molecular sieve character as well as the viscoelastic, impact absorbing and energy-consuming behavior of the basic substance. Thus at the same time the derivated hydrocarbons guarantee isoionicity, isoosmosicity, and isotonicity in the basic substance [7: 52-55, 45-56; 16, 17].

In the disrupted basic system, the degeneration of the local regulation system is communicated in a somato-sensory and visceral-sensory manner via the related spinal nerves to the spinal marrow. Following segment-related processing by the central nervous system, the somato- and visceralmotoric response leads to typical tonic-algetic pain symptoms in the related segmental-regulatory complex [2, 6, 8]. As the stimulus increases and with the assistance of the central regulatory processes, this initially primarily local phenomenon leads to a general illness. The reflex syndrome leads at an early stage to perceptible changes to the dermatological connective tissue.

Among diabetics, marked edema of the dermatological connective tissue, in particular in the region of the legs, is often observed; by this is meant that they can be detected not only palpably but also by sonographic means. The modified reaction capabilities of the basic system can be determined as the progressive inability to modulate stimuli locally or completely, whereby determination of this malfunction can be carried out with, among other methods, decoder-pulse dermographia or regulation thermography . Here it has been shown that the basic system possesses a certain degree of automation vis-à-vis the central control. With the spread beyond the location of the load, the autonomic nervous centers gain increasingly in influence. Summation effects play a decisive role for the degree of severity of the further course of the disease.

The first symptoms, which patients with diabetic neuropathy notice, are feelings of numbness and tingling paresthesia in the feet and sometimes also malfunctioning of the senses of temperature and pain. The hyperalgesic forms with burning spontaneous pain, which occur particularly at night, are termed "burning feet syndrome". Pain or, as the case may be, parathesia in the legs at rest are an indication of a neurological disorder [3]. At the beginning of the symptoms, the quality of the pain is described as "racking" and "burning", its intensity from easily bearable, disrupting, sleep-interrupting to "scarcely bearable" [3]. In the further course of the disease unsteadiness when walking soon comes about, the consequence of a severe hypaesthesia without giddiness. Here painful symptoms are generally mentioned earlier than symptoms with little or no pain. Deficits in sensitivity and - with progression of the polyneuropathy - motoric deficits such as weakness in raising the foot are tolerated for an astonishingly long time.

5 g	Myositis arvenis D3
5 g	Veronica D3
5 g	Teucrium scorodonia D3
5 g	Pinus silvestris D1
5 g	Gentiana lutea D5
5 g	Equisetum hiemale D4
5 g	Sarsaparilla D6
5 g	Scrophularia nodosa D3
5 g	Juglans D3
5 g	Calcium phosphoricum D12
5 g	Natrum sulfuricum D4
5 g	Fumaria officinalis D4
5 g	Levothyroxin D12
5 g	Aranea diadema D6
10 g	Geranium robertianum D4
10 g	Nasturtium aquaticum D4
10 g	Ferrum iodatum D12

Table 1: Composition of Lymphomyosot (100 g).

With age-conditioned chronic illnesses, even banal loadings have a considerable effect. The regulatory rigidity of the basic system as the final stage of chronic progressive inflammation leads to complete dissociation of the basic and the immune systems. It is known that reaction-disrupted relationships of the basic system as described above are suitable for the therapy with antihomotoxic preparations and the employment of appropriate agents enables the physician to increase therapeutic possibilities [15].

The objective of this study was to investigate whether antihomotoxic therapy with Lymphomyosot (Table 1) could be helpful in cases of diabetic polyneuropathy.

SELECTION OF THE PATIENTS AND METHODS EMPLOYED

From the overall collective of the Focal Point Practice for Diabetology (as documented in the PROSIT study, Lower Saxony), a total of 90 patients were selected for this study. All selected patients had to have a foot edema or an edema of the lower leg, in the latter case in an advanced stage (c.f. Table 2).

From the above total collective, two groups were formed (group 1:50 patients, group 2:10 patients). Only patients with a medium severe or severe polyneuropathy were assigned to group 2 in order to be able to justify the standard infusion treatment.

A third group of 30 patients (16 women, 14 men, ages between 59 and 77; diabetes setting: diet; Metformin: 7; intensified insulin therapy: 22) with appropriate edema and diabetic polyneuropathy served as control group.

Sonographic control investigations were carried out only in the therapy groups and not in the control group since findings of this type have been well documented in the literature.

The degree of severity of an edema can be determined and classified scintigraphically. However this was not done here due to its high cost. In this study palpation and the positive Stemmer sign according to Rydell and Seifer as well as sonography were used to classify the degree of severity.

	Edema	Polyneuropathy	Mean HbA1c prior to beginning of therapy
Slight	14	21	6.8
Moderate	30	20	6.9
Severe	16	19	7.1

Table 2: Patients of group 1 (Lymphomyosot) and group 2 (Lymphomyosot and alpha lipoic acid) with clinical findings prior to the beginning of therapy.

SELECTION OF THE PATIENTS AND METHODS EMPLOYED

With polyneuropathy, the isolated impairment of the perception of vibration can be a sensitive investigation finding. Accordingly the testing of the vibration perception with the aid of the neurological tuning fork according to Rydell and Seifer (C tone 128) represents a practical and important investigation test, which tests the functionality of the sound-conducting nerve fibers and thereby complements the testing of temperature perception. This clinical test - possibly with the use of simple additional devices - is of equal rank to those measurement processes requiring expensive equipment.[14] Accordingly the testing of the perception of vibration with the tuning fork according to Rydell and Seifer was used regularly as a standard neurological investigation.

For the investigation of the development of a diabetic foot, an investigation of those sensitive (pain-conveying and autonomous) nerve fibers is especially important since the functional disorders of the latter are the cause of the diabetic foot. These nerve-fiber functional groups have the smallest caliber ("small fibers"). The most suitable methods of investigation include tests of sensitivity to temperature and autonomous function tests [9, 19]. In this study, the crude clinical test of sensitivity to temperature was carried out. A thermo-cross investigation with the aid of electrically heated sensors was dispensed with.

The classical electrophysiological investigations (nerve conduction speed) could not be carried out in this study with one exception for reasons of cost.

SONOGRAPHY

With the aid of ultrasound investigation, the tactile findings were objectified for the collection of the status of the vessels of the lower leg and served to exclude a venous genesis of the edema. The representation of the three states of the edema in the sonogram is summarized in Table 3. The transitions between the three groups of edema is fluid.

For the 50 patients of group 1, a color sonography (ACUSON XB 128 / 10 MHz sound head [high-end ultrasound device]) was carried out on the leg vessels of both lower legs with a soft part sonogram. For the 15 patients with severe edema, a control sonography of both lower legs was carried out at the end of the study. Steps were taken to ensure that the same sonography device was used on each occasion and that the investigations were carried out by the same person in each case. In addition, nuclear magnetic angiography of both lower legs was carried out on 5 patients with severe edema at the start of the study to check the vascular system. Here native representation was carried out first, then a bole series and two filling series with subtraction; finally representation was carried out in MIP mode (maximum-intensive projection).

TREATMENT SCHEMATA

In the study a total of 60 patients (41 women, 19 men, ages between 40 and 70) divided up into 2 groups were treated with Lymphomyosot®. All patients had had diabetes mellitus type II for at least 5 years; diabetic polyneuropathy was determined diagnostically. In addition the comparison was carried out with a control group of 30 type II diabetics (16 women, 14 men, ages between 59 and 77).

The study was carried out for 8 months from October, 1998 to May, 1999.

Description of the three groups:

Group 1 (n = 50) received 15 drops of Lymphomyosot® twice a day. There was diabetic polyneuropathy of slight degree with 21 patients, of moderate degree with 16 patients, and of severe degree with 13 patients. In the case of 10 patients the diabetes mellitus was set with the diet, with a further 10 patients with Metformin®, with a further 10 patients with basal-insulin in combination with Metformin®, and with 20 patients with intensified insulin therapy.

Group 2 (n = 10) received 15 drops of Lymphomyosot twice a day and in addition alpha lipoic acid infusions (600 mg alpha lipoic acid in 250 ml 0.9% NaCl solution); each patient received a total of 10 intravenous infusions distributed over a period of 8 months. In this group 5 patients had diabetic polyneuropathy of moderate severity and 5 severe diabetic polyneuropathy.

Group 3 (n = 30) served as the control group, with the patients being treated only with alpha lipoic acid. In this group 22 patients had diabetic polyneuropathy of moderate severity and 8 patients severe diabetic polyneuropathy. Each patient received a total of 10 intravenous infusions distributed over a period of 8 months.

RESULTS

The mean HbA1c value as checked regularly on all 300 diabetics of the focal point practice was 7.4 (PROSIT study, Lower Saxony). The patients were selected from this patient collective (c.f. table 2). None of the patients included in this study had an ulcer in the lower leg or foot region.

In all three groups no Achilles tendon reflex could be triggered when checking the reflex status of the patients with severe polyneuropathy.

CHECKS ON THE NEUROLOGICAL FINDINGS

Group 1: At the start of the study 21 patients showed slight (6 - < 8), 16 patients moderately severe (3 - 6) and 13 patients severe (< 3) neurological disorders , according to Rydell and Seifer. At the end of the study, 6 of the patients with slight disorders showed an improvement

- A slight edema shows slight thickening of the cutis, the lymph paths have just become detectable (i.e. they are less marked than in the clinical finding). The volume of the lymph vessels is in the region of < 1 mm.
- An edema of moderate severity is characterized sonographically by clear representation of the lymph paths; they are slightly widened and the volume of the lymph vessels is in the region of > 1 mm. In the sonogram image, the basic structure shows a checkboard like ladder figure.
- A severe edema is characterized in the sonographic representation by widening of the lymph vessels, these showing in part a sack like or lake like configuration of up to 3 mm in cross-section. In particular the pretibial lymph paths are severely widened.

Table 3: The three states of edema in the sonogram

of 0.5 / 8 - 1.5 / 8 on the scale, 8 of the patients with moderately severe sensibility disorders an improvement of 0.5 / 8 - 3.0 / 8 and 3 of the patients with initially severe neurological disorders an improvement of 1.5 / 8 - 6 / 8 on the scale (Table 4). No improvements were achieved with the remaining patients. The improvements in sensibility correlated with the reports of the patients on a lessening of the pain symptoms.

Group 2: The improvements in sensibility in this group were even higher than in group 1 (table 5). The initial values of the sensibility lay at 0 / 8 (severe disorder) and 5 / 8 (moderately severe disorder) on the scale. At the end of the 8 month period of treatment, the values had improved to 3 / 8 and 8 / 8 respectively.

Group 3: With 12 patients the sensibility was unchanged at the end of the study and with 16 patients there was an improvement of 0.5 / 8 to 2.5 / 8. In spite of the infusions there was a deterioration of 2 / 8 on the scale with 2 patients.

In the case of the 15 patients in groups 1 and 2 with severe edema on whom a control sonography was carried out on both lower legs at the end of the 8 month period of the study, clear changes in the region up to about 10 cm below the knee-joint crevice were able to be detected.

Edema findings	Prior to therapy [n]	After therapy		Vibration change after therapy [n]
		Retrogression [n]	Unchanged [n]	
Slight	14	10	4	0.5 - 1.5 / 8
Mod. severe	26	19	7	0.5 - 3.0 / 8
Severe	10	9	1	0.5 - 6.0 / 8

Table 4: Results of the neurological and edema findings in group 1 (Lymphomyosot: n = 50).

CHECKING OF THE EDEMA

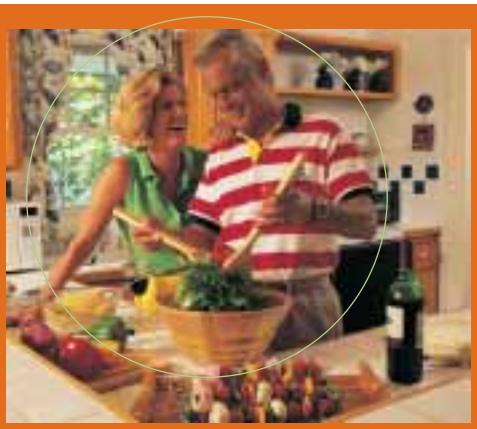
Group 1: At the start of the study 14 (28%) of the patients showed a slight edema, 26 (52%) a moderately severe one and 10 (20%) a severe one. The patients with the slight edema had in general vibration values between 6 / 8 and < 8 / 8, the patients with moderately severe edema had values between 3 / 8 and 6 / 8 and the patients with severe edema had values of between 0 / 8 and 3 / 8 on the scale according to Rydell and Seifer (Table 6).

The clinical or, as the case may be, sonographic check showed complete retrogression in the case of 10 patients with slight edema and no change in the case of the other 4 patients, although with the latter, too, an improvement in sensibility was observed. A sonographic check at the end of the study was carried out only with the patients with severe edema.

Of the 26 patients with moderately severe edema, there was considerable retrogression with 19 patients; with the other 7 no changes in the edema were observed but the sensibility had improved.

Of the 10 patients with severe edema, the edema decreased to moderately severe with 7 patients, with 1 patient the edema improved very considerably (towards slight) while with a further patient complete retrogression of the edema was recorded. With the final patient, no change to the edema took place but there was a detectable improvement in sensibility.

In the color sonography examination, 21 patients with lightly marked diabetic polyneuropathy showed no arteriosclerotic vascular lesions, 16 patients with moderately severe diabetic polyneuropathy had slight vascular lesions in the region of the lower leg, and 13 patients with severe diabetic polyneuropathy had general vascular sclerosis with luminal restrictions of some 50% as demonstrated with nuclear magnetic angiography.


Patient No.	Sensibility findings				Difference	
	Prior to treatment		After treatment		(Improvement)	
	right	left	right	left	right	Left
51	3.0	2.0	8.0	8.0	+ 5.0	+ 6.0
52	4.0	4.5	6.0	4.5	+ 2.0	0.0
53	2.5	3.5	6.0	6.5	+ 3.5	+ 3.0
54	2.0	3.0	6.0	5.0	+ 4.0	+ 2.0
55	2.0	3.0	6.0	6.0	+ 4.0	+ 3.0
56	4.0	4.5	7.0	5.5	+ 3.0	+ 1.0
57	4.0	3.5	6.5	6.0	+ 2.5	+ 2.5
58	3.0	6.0	8.0	8.0	+ 5.0	+ 2.0
59	2.0	2.0	4.5	6.0	+ 2.5	+ 4.0
60*	0.0	2.0	5.0	7.0	+ 5.0	+ 5.0
Statistics						
Mean	2.6	3.4	6.3	6.3		
SD	1.2	1.3	1.1	1.2		
Median	2.8	3.3	6.0	6.0		
Minimum	0.0	2.0	4.5	4.5		
Maximum	4.0	6.0	8.0	8.0		
U-test			$\mu = 0.0002$	$\mu = 0.0008$		

*The sensibility finding was confirmed by a neurological investigation at the University of Göttingen. The sensibility disorders had existed for 12 years at the time of the study.

Table 5: Sensibility improvements in the lower legs of the patients from group 2 (Lymphomyosot + alpha lipoic acid).

	Soft part sonography			Vibration		
	Start [n]	Retrogression [n]	Unchanged [n]	Start	Control	Difference
Slight	14	10	4	5.0 / 8	7.5 / 8	+ 2.5 / 8
Moderately severe	26	19	7	3.0 / 8	6.0 / 8	+ 3.0 / 8
Severe	10	9	1	0 / 8	3.0 / 8	+ 3.0 / 8

Table 6: Sonographic and vibration test in group 1 (Lymphomyosot, n = 50).

A striking finding was that clinically confirmed polyneuropathy always correlated with the existence of an edema whereby the latter can be detected before the onset of vascular lesions.

Group 2: In this group where the patients were treated with Lymphomyosot and alpha lipoic acid, good retrogression of the edema was observed in all cases.

Group 3: The findings on the edema of the patients in the control group showed no significant change relative to the initial findings.

UNDESIRED EFFECTS

No undesired effects were observed under the treatment with Lymphomyosot.

DISCUSSION

Among 75% of the patients pain and dysesthesia had disappeared completely at the end of the therapy with Lymphomyosot. In the control group which was only treated with alpha lipoic acid, an improvement in sensibility was not detected in all cases and the degree of improvement was less than in the group of patients who were treated with Lymphomyosot drops in addition to alpha lipoic acid. The dermatological findings in the control group were unchanged relative to the initial findings.

Areas of application that have been tested up to the present time for Lymphomyosot include lymphatism, edema, weakness in resistance, scrofulosis, and other swelling of the glands. The effect of this medicament in respect of mesenchymal purification (matrix) is known. In addition there are opportunities for therapies supplementing the diuretic treatment of cardial and renal edema. According to Reckeweg, it is also an important detoxification and drainage agent with all impregnation, degeneration and neoplasm phases [15].

In order to estimate the effect of Lymphomyosot on diabetic edema and polyneuropathy, the results from 60 patients with diabetes mellitus type II were compared with those from a control group of 30 patients who received only the known standard therapy (alpha lipoic acid infusions). Of the patients investigated with type I diabetes in groups 1 and 2, 21 had slight vascular lesions in the sense of the onset of arteriosclerosis, 26 had moderately severe vascular lesions, and 13 had severe vascular lesions (restriction of the lumen of at least 50 %).

As is the case with arteriosclerosis, Moenckberg mediasclerosis is frequently often observed with diabetics [5]. The occurrence of a mediasclerosis is not only associated with the signs of an autonomous or peripheral neuropathy but also with other clinical findings such as hypertension, coronary heart disease, and diabetic retinopathy. A marked reduction in the perception of vibration always means a considerable increase in risk with diabetics since the pain-induced protective reaction is absent [13]. With affected patients with severe edema and at the same time severe diabetic neuropathy, the Achilles sinew reflex can generally not be triggered. This too must be interpreted as a sign of increased risk for the patients in question.

The fact that slight to severe dysesthesia occurs at the start of neuropathy is - in respect of the treatment of the disrupted matrix metabolism with diabetes type II - to be understood on the one hand as a hindrance to metabolism brought about by deposits of harmful substances and, on the other hand, as a chronic-inflammatory process. The results of this study indicate that further clarification is required to determine which of these two causes is at the bottom of the severe dysesthesia. The feeling of numbness that comes later and is accompanied with a reduction in the dysesthesia is a sign of the increasing chronicity of the disease.

The color sonography and nuclear magnetic angiography carried out before the commencement of the study showed that:

- with diabetes type II a slight edema can be detected before any recognizable vascular lesions have come about,
- with a moderately severe edema, slight arterial and venous vascular lesions occur parallel to the edema, and
- with patients with severe chronic edema, severe general vascular sclerosis with restrictions of the lumen of up to 50% is detectable.

It is possible that a large proportion of the neurological losses can be attributed to metabolic and inflammatory processes in the matrix region. Further investigations on this question are envisaged.

The patients in group 1 (Lymphomyosot) showed good improvement of the sensibility disorders. The group 2 patients (Lymphomyosot and alpha lipoic acid) showed very good sensibility improvement in the sense of improved utilization of the alpha lipoic acid at the nerve cells. The patients of group 3 (alpha lipoic acid) showed in part only small improvement in sensibility.

Seventy-five (75%) of the patients in groups 1 and 2 showed freedom from pain to a large extent at the end of the study. Accordingly the findings as presented permit the conclusion to be drawn that - with patients with diabetic mellitus type II - the known risks can be reduced and the prognosis for the vascular, lymph, and neuronal disorders improved through Lymphomyosot. The observations made to date indicate that this matrix therapy - by which is meant a drainage therapy with Lymphomyosot - can be employed as an adjuvant treatment with preventive medicine and in rehabilitation.

Long-term studies with additional neuro-physiological investigations are planned to check the results. In prognostic terms, it is to be expected with this clinical picture that lymph therapy employed in addition to the known standard therapy with alpha lipoic acid will positively influence the multifarious secondary diseases of diabetes mellitus.

BIBLIOGRAPHY

1. Alberts B, Bray D, Lewis, J. et al., in German "Cell-cell adhesion and the extracellular matrix". In Alberts, B. (publisher) "Molecular biology of the cell", 1st edition, Weinheim; VCH-Verlagsgesellschaft, 1995: 749 - 794.
2. Balasz, F.A. (ed.) "Chemistry and molecular biology of the intercellular matrix", New York Academic Press, 1970.
3. Berger, M., in German "Diabetic mellitus", Munich: Urban und Schwarzenberg, 1995: 512 -- 22.
4. Champion, B,R. et al. "Age-related changes in the antigenicity of human articular cartilage proteoglycans", Collagen Rel Res, 1982: 45 - 60.
5. Everhart, J.E., Perrot, D.T., Knowier, W.C., Rose, F.A., Bennet, P.H. "Medial arterial calcification and its associations with mortality and complications of diabetes. Diabetlogia, 1988; 31: 16 - 23.
6. Hay, E.D. "Collagen and embryonic development". In Hay, E.D. (ed.) "Cell biology of extracellular matrix", 2nd edition,. New York, London: Plenum Press 1983: 379 - 410.
7. Heine, H. (publisher), in German "Textbook of biological medicine"", Stuttagrt: Hippokrates 1991.
8. Heine, H., Schaeg, G. in German "Information control in the vegetative periphery. Z. Hautkrankh.. 1979; 54: 590 - 598.
9. Kleinfeld, in German "The diabetic foot", Münch. Med Wochensc. 1991; 133: 711 - 715.
10. Lininger, C., Albenau, A., Assal, J.P. "Measuring diabetic neuropathy - "Locotech" vs. "High tech". Diab. Car. 1996: 13: 180 - 181.
11. Luft, D., Maisch, C., Domberger, V., Fort, T., in German "Moenckeberg's mediasclerosis with diabetics". Diab. Stoffw. 1999; 8: 75 - 81.
12. Randoll, U.G., Keilholz, L., in German "Granulocyte function test in thick drops of blood" - a dynamic cell interaction test of the future", Forum Immunologie 1994; (4): 10 - 12.
13. Reike, H., in German "The diabetic foot syndrome", 4th edition. Grossfelling: SMV 1996: 110.
14. Reiners, K., Hennerici M., Toyka, K. in German "Diabetic mellitus". In Zeidler, H. (publisher". "Innere Medizin der Gegenwart". Volume 7, Rheumatology, Munich, Urban und Schwarzenberg, 1989: 717 - 726.
15. Reckeweg, H.-H. in German "Homotoxicology - Overall review of a synthesis of the medicine". Baden-Baden, Aurelia, 1981.
16. Rimpler, M. in German "Biochemistry and biophysics of the basic substance". BioMed 1996; 25: 247 - 250.
17. Rimpler, M. in German "Matrix research - departure for new shores". Therapie-Woche 1998; 38: 853 - 854.
18. Schewing, L.E., Halberg, F., Pauly, J.E. in German "Chronobiologie", Stuttgart: Thieme 1974.
19. Thissen, R. in German "A new device for testing thermo-sensibility promises effective early detection". Rhei. Ärztebl. 1986; 6: 251-254.

Address of the author: Angelika-Regine Dietz, M.D.
Alexanderstrasse 3
30159 Hannover
Germany