

Diagnostic observations of Traditional Chinese Medicine on organ dysfunction in patients with sleep disorders and infections

Observational Study

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Abstract

A total of 166 patients with chronic sleep disorders were examined - in parallel to a general medical, laboratory medical and microbiological diagnostic monitoring - by TCM diagnostics comprising approach, anamnesis, pulse and tongue diagnostics. 79 percent of the patients examined had infections, 92 percent had digestive disorders.

Chronic sleep disorders in general stand on the tail end of a physical process. Moreover, they are the result of a progressive chain reaction. An infection-related spleen overload can lead to a kidney overload (spleen-kidney yin weakness). This is combined with digestive disorders and other organ dysfunctions (liver and heart) acting in tandem. The purpose of the study was to examine the processes and their interactions with regard to the order of their sequences and to observe the connection between chronic sleep disorders and organ dysfunctions from the perspective of Traditional Chinese Medicine.

As a result of the observations, disorders of the kidneys (in 95 percent of the patients), the liver (in 58 percent), the spleen (in 42 percent) and the heart (in 23 percent) were found. In combination, weakening was observed in kidney and liver (27 percent), kidney and spleen (20 percent), kidney and heart (ten percent); kidney, spleen and liver (18 percent), kidney, liver and heart (ten percent) and kidney, spleen and heart (two percent).

These results reveal that chronic sleep disorders and infections are very commonly associated with multiple organ dysfunction.

The study suggests that antimicrobial therapy in combination with traditional Chinese medicine interventions can treat chronic sleep disorders. Early treatment of spleen-kidney yin weakness could also prevent the accumulation of organ dysfunction and thus prevent sleep disorders.

Keywords: Sleep disorders, infections, organ dysfunction

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1 Introduction

In the medical discourses, there are no uniform terms for the medicine that has developed on the basis of Western healing traditions. Depending on the interest, with regard to modern Western medicine, the terms “evidence-based medicine”, “modern medicine” or “scientific medicine” are also used. Medical procedures such as TCM are then described as “complementary medicine”, “alternative medicine” or, for example, “healing science”. In recent decades, however, a differentiated perception of medical issues has prompted the merits of both cultural backgrounds to be combined. Both medical systems are now practised and researched globally and comprehensively beyond the cultural sphere in which they originated.

In modern Western medicine and in Traditional Chinese Medicine (TCM) (1), chronic sleep disorders are not typically associated with unnoticed and hidden infections. A recent study has now observed the relationship between sleep disorders, infections (especially *Candida albicans* and *Helicobacter pylori*), digestive disorders and organ dysfunction (2).

The task of the TCM study described below is to observe the same patient collective of this specialist medical study by means of Traditional Chinese Medicine diagnostics. In addition to the observation of organ dysfunctions by laboratory analysis and sonography, the same patients were examined in terms of approach, pulse diagnostics (3) and tongue diagnostics (4).

The present study thus contributes to the first parallel diagnostic observation of patients with sleep disorders and infections by modern Western and Traditional Chinese Medicine. In this context, the study also wants to highlight the possibilities of combining both approaches in the case of complex clinical symptoms - such as sleep disorders in this case. For both diagnostics and therapy, this opens up new possibilities for patients with often long histories of suffering.

With regard to sustainable therapies, it is particularly important to consider interactions, functional circuits, chains of causes and multiple factors that ultimately lead to chronic sleep disorders. Especially for the connection between infections and organ dysfunctions, which often manifest themselves in digestive disorders and infection-

related gastrointestinal diseases, there is neither an overall diagnosis nor integrative therapies of the overall causes in both medical systems.

The combination of TCM and modern western medicine and the combination with microbiology could also contribute to progress in the treatment of sleep disorders from the point of view of the present study (Note 1).

2 Results of the diagnostic observation studies

The proportion of organ dysfunctions in chronic sleep disorders is substantial (Note 2). The most significant contributors are disorders of the kidneys, liver, spleen and gall bladder and their interaction, as well as stress on the heart and brain (Note 3). However, little or no attention is paid to the causal chain of its development, its frequent onset in infection-related splenic overload.

Based on the symptoms in patients, TCM practitioners describe the patterns of physical disharmony in terms of eight main parameters: Yin and Yang, external and internal, hot and cold, excess and deficiency. Other systems, such as Qi (vital energy), blood and body fluids, body fluids and zang fu (organ) differentiation are also applied (8).

With regard to a standardisation of the disturbance and stress patterns, great progress has been made in recent years, including the classification of sleep disorders (insomnia) in Traditional Chinese Medicine (9). It has been shown that even though different terminologies are used, they often have the same meaning. For example, in a review of TCM classifications of sleep disorders in the studies analysed, eight different Chinese terminologies were used to describe problems falling asleep and four different Chinese terms were used to describe insomnia. However, when compared, there is common ground in the terms used (9: 3). The classification distinguishes between sleep-related and non-sleep-related symptoms, as well as significant manifestations in pulse and tongue diagnosis.

For **sleep-related symptoms**, such conceptual groups include, for example, circumstances such as excessive dreaming, nightmares, insomnia, difficulty falling asleep, insomnia with worry, restless sleep, frequent waking, half-sleeping, falling asleep late, non-restorative sleep, early morning awakening, shallow sleep, daytime

sleepiness, waking up easily from sleep with difficulty falling back asleep, inability to sleep all night, difficulty falling asleep at night.

Non-sleep related symptoms included dizziness, palpitations, anger, poor memory, dry mouth, tinnitus, bitter taste, lassitude, feverish sensations in the palms of the hands, soles of the feet and chest, fatigue, backache, shyness, decrease in the luster of the skin, irritability, loss of appetite, constipation, tightness in the chest, red eyes, congestion in the chest and stomach, headache.

The **tongue characteristic** that was most common in the excess patterns was a red tongue in most of the sleep disorder studies evaluated. In Liver-Qi stagnation, which turns into Fire, there was also a yellow coating, and in internal disturbance of Phlegm-Heat, a yellow and Phlegmy coating was also present. However, red tongue can also occur in two deficiency conditions: Hyperactivity of Fire due to Yin deficiency and non-interaction between Heart and Kidney. In this respect, the assessment is always context-dependent and requires a lot of experience in tongue diagnostics.

A pale tongue was observed in all deficiency states, except in the case of hyperactivity of the Fire due to a Yin deficiency; in the case of a deficiency of the heart and spleen deficiency, there was also a thin coating.

The **pulse characteristic** that often occurred in excess TCM patterns was a rapid pulse; in deficiency patterns the pulse was fine. However, rapid pulse was also found in the two deficiency patterns, hyperactivity of Fire due to Yin deficiency and Heart Kidney non-interaction, while fine pulse was also found in two excess patterns, Liver Qi stagnation turning into Fire and Liver Fire flaming upwards.

The diagnostic patterns for insomnia in the context of TCM are diverse due to the complex organic disorder pattern.

Nevertheless, such patterns can be summarised in groups. An evaluation of more than one hundred studies on the causes of sleep disorders shows Heart and Spleen weakness as the most common (N = 2378, 25.0 % of the 9499 subjects), followed by Hyperactivity of Fire due to a Yin deficiency, Liver-Qi stagnation which turns into Fire, Heart-Kidney non-interaction, Qi deficiency of Heart

and Gallbladder, internal disturbance of Phlegm-Heat, Liver-Fire flaring upwards, Heart deficiency with anxiety, Stomach disharmony and Stomach-Qi disharmony.

The top ten TCM patterns accounted for 77.4% of the total 9499 subjects studied (9: 3).

These correlations show how, from the TCM point of view, organ disturbances (especially of the kidneys, liver, spleen, gall bladder and heart) are involved in sleep disorders.

3 Material and methods

3.1 Patients

From August 2018 to April 2022, 166 patients were included in the study. All patients came from the patient collective of the MVZ Ärztehaus Mitte in Berlin and were also examined in the TCM practice at their own request in parallel to the diagnostics of the Ärztehaus. All patients suffered from chronic sleep disorders.

The duration of the sleep disorders was between one and five years in 73 patients, between six and ten years in 50 patients and 43 patients stated that they had been suffering from sleep disorders for more than ten years.

In 79 percent of the patients, microbiological examinations by the medical centre and its special microbiological laboratory had found infections with pathogenic yeasts, in 24 percent infections with *H. pylori* and in 17 percent mixed infections.

Digestive disorders were found in 92 percent of the patients, in 77 percent of which the severity of the disorders was striking to severe. Observations of sonographic examinations in correlation with sleep disorders revealed visible liver dysfunction in 45 patients (27 percent) and kidney dysfunction in 33 (20 percent) (2).

3.2 Diagnostics

In addition to the observation of organ dysfunctions by laboratory analysis and sonography of the medical centre, the same patients were examined in the TCM practice by approach, pulse diagnosis (3) and tongue diagnosis (4).

4 Results

The observations of the TCM examinations revealed a high proportion of organ dysfunctions in correlation with sleep disorders (cf. Fig. 1), especially in the kidneys, liver and spleen). In addition to the organ dysfunctions determined by laboratory analysis and sonography, further organ dysfunctions were found, so that the quantity of patients with dysfunctions determined by specialist medicine was a subset of the patients diagnosed with TCM.

Multiple disorders were thus noted within the framework of TCM diagnostics, which showed up in combination (cf. Fig. 2).

5 Discussion

The diagnostics of traditional Chinese medicine are capable of supplementing imaging procedures and especially “snapshots” of the physical condition of patients. Through its pulse and tongue diagnostics, it can often better describe interrelationships in the body, the interaction of organs in the sense of functional circuits, than the selective, often only quantitative individual determination of values can.

In the laboratory, kidney readings can be determined. It is possible to observe kidney damage (e.g. of the parenchyma) by sonography, and a few kidney readings can be taken. The mycological evaluation of stool and mouth samples detects, for example, an infection with a pathogenic yeast. However, the determination of kidney Qi in connection with spleen Qi or the observation of a spleen-kidney yin weakness can give indications of disturbances that cannot be detected by laboratory analysis and image observation alone.

Studies show how the experiences of TCM can be made comprehensible for the findings of Western medicine. It becomes clear that when working systematically, there is a connection between organ function observations of modern medicine (represented in readings and images) and the energetic approach to processes in TCM.

For example, if we look at the pathogenesis in the process of chronic kidney diseases, which play an important role in the connection with sleep disorders, then a relationship can be described between the pathogenesis

of TCM theory and the theory of “modern” specialist medicine (cf. Fig. 3) (10).

In chronic kidney disease (CKD), the relationship between the pathogenesis according to TCM theory and the theory of modern medicine (see Fig. 3) can be described as follows:

A) In chronic kidney disease, for TCM, the functions of the spleen and kidneys are insufficient even in the early stages. However, the Qi can still resist exogenous pathogens. The pathogenesis at this stage is characterised by pathogenic excess (such as Dampness, Heat and Blood stasis). If the disease progresses to the mid-stage, then the Qi can no longer control the pathogenic factors and pathological products are formed. The pathogenesis is then characterised by a mixture of deficiency and excess. As the disease progresses, vital Qi becomes depleted, the pathogenesis is then characterised by a deficiency of Qi. This can lead to the accumulation of toxins. In the different stages of nephropathy, the degrees of priority of deficiency and excess are different. Deficiency and excess are cause and effect of each other, leading to a continuous progression of the kidney disease.

(B) On the left side (cf. Fig. 3) the modern medical features and the main pathological process of CKD are shown. On the right side, the TCM treatment strategy using CMM (Chinese Materia Medica) is shown. Listed here are the representative CMMs corresponding to each pathogenesis.

Such interactions have now also been extensively related to the conceptual conventions of modern western specialist medicine for other diseases. The progressive incorporation of TCM diagnostics into ICD-11 shows the growing importance of TCM services in modern Western medicine as well (10, 11). The standardisation of the translation of TCM terminology is also being pursued by the WHO (12).

Also for the pathogenesis of other organs, such as liver (13, 14), spleen (15), gall bladder (16, 17, 18, 19), heart (20, 21) and thus especially for organic functional interrelationships, whose disturbances can lead to chronic sleep disorders. The involvement of psychological factors and brain physiological processes in sleep disorders is undisputed. However, it should be noted that it is precisely the standardisation of the

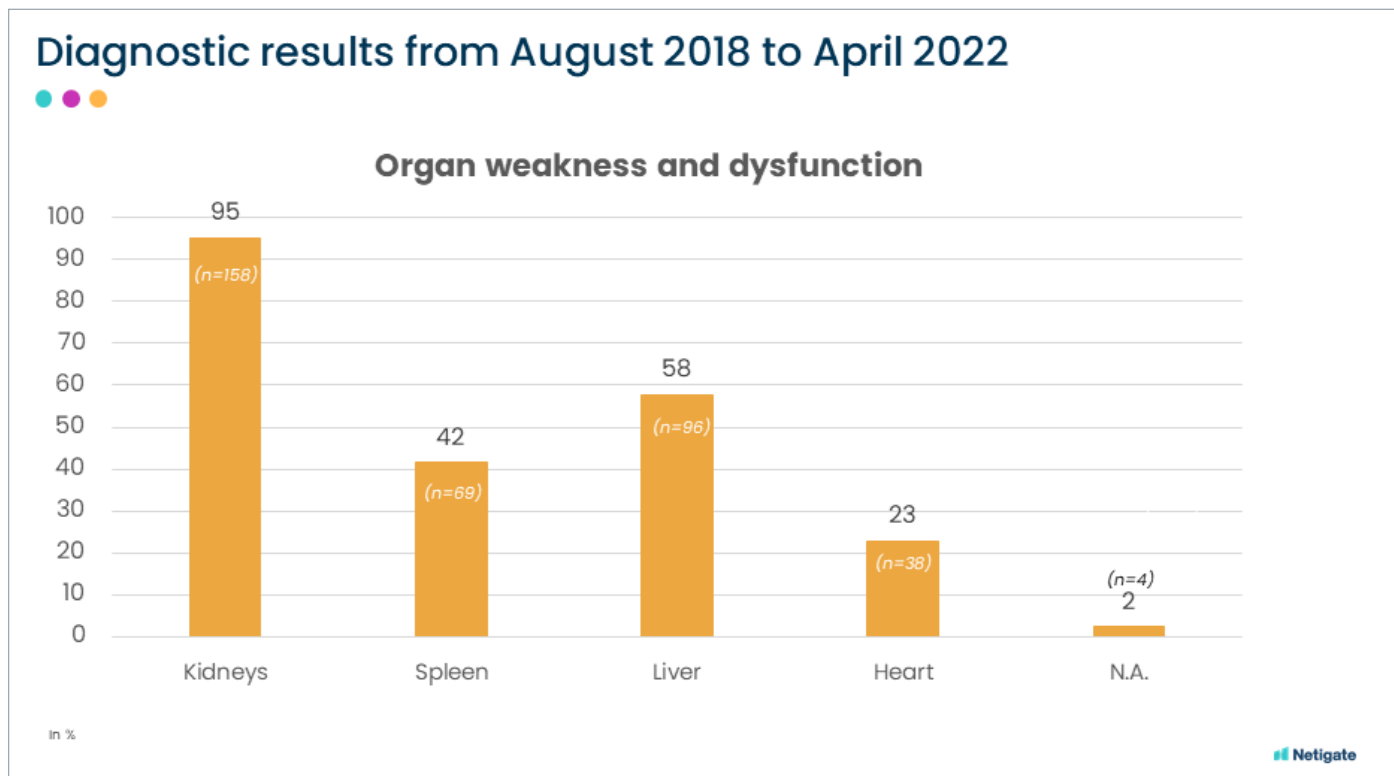


Fig. 1 Frequency of organ dysfunctions found in the observed patients of the study by sonographic and laboratory examinations, as well as TCM examinations.

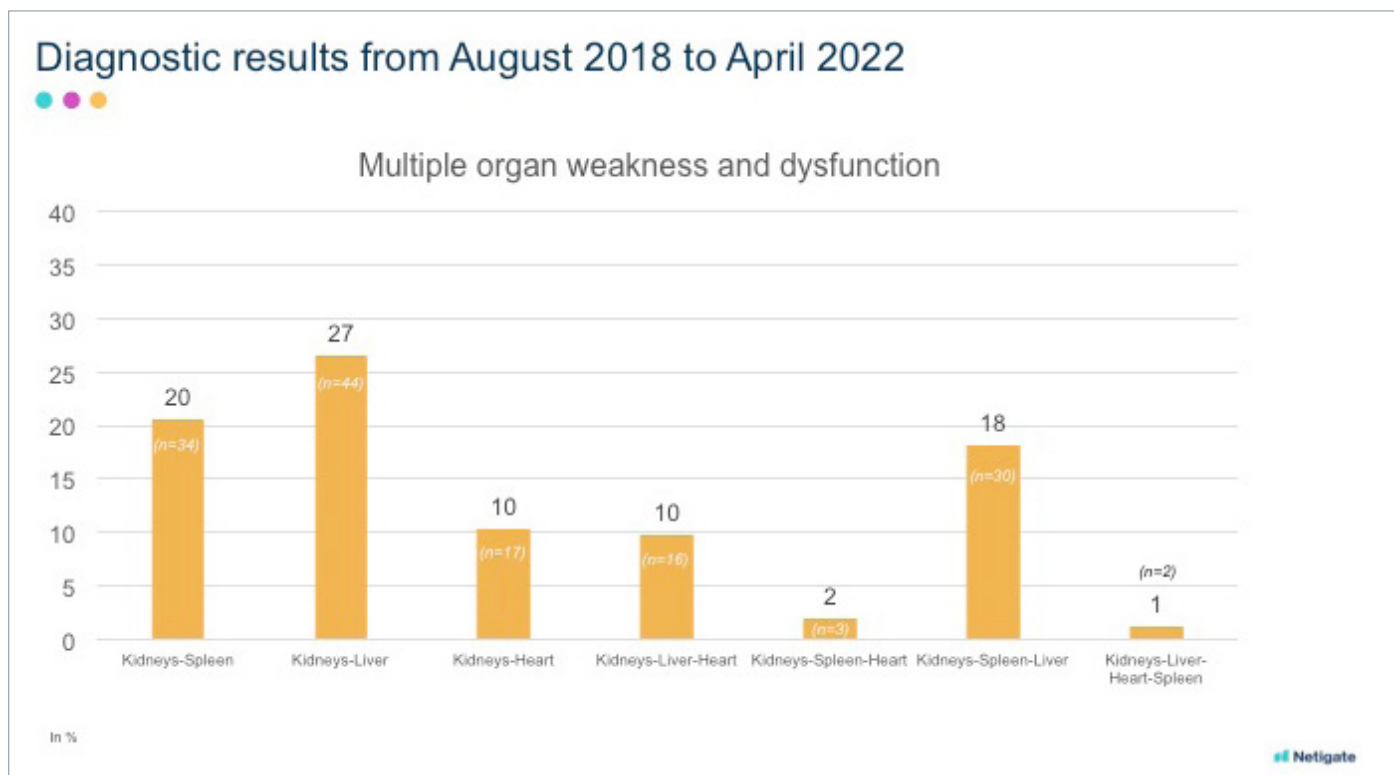


Fig. 2 Frequency of combined organ dysfunctions found in the observed patients of the study by TCM examinations.

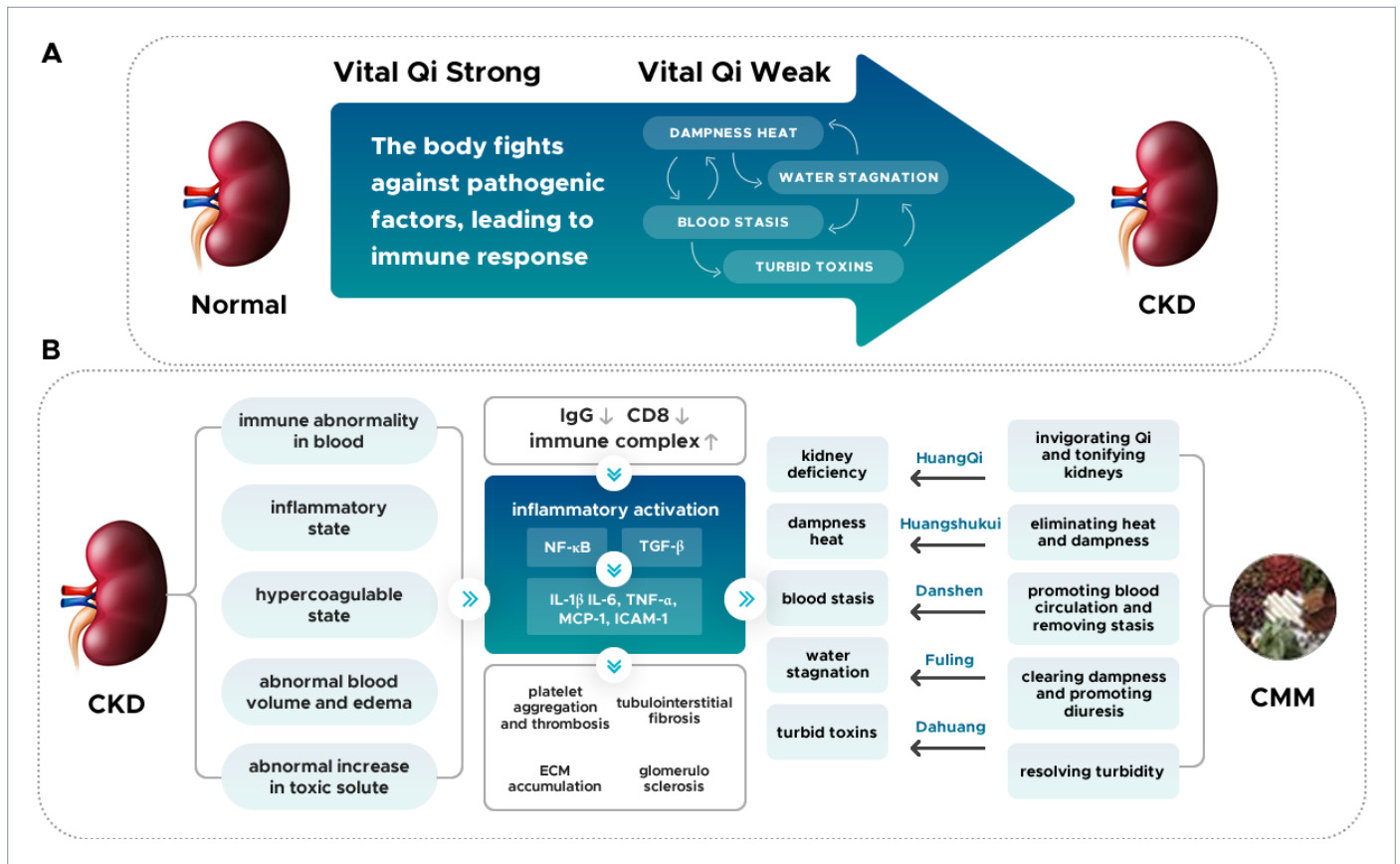


Fig. 3 Relationship between the pathogenesis of TCM theory and the theory of modern medicine in chronic kidney disease and its treatment.

diagnosis and treatment of physical processes by TCM that creates a different impression. The mental stress can also be explained as the result of an overload of the system, which has a cause in the overload of the immune system and the spleen functions. This could lead to a different healing approach which avoids psychotropic drugs and sleeping pills.

Comprehensive research and standardisation also counter the suspicion, often prevalent in modern Western medicine, that TCM remedies could generally cause organ damage (Note 4) or that they are not amenable to evidence-based research (23).

A combined examination of sleep disorders by general practitioners and specialists, laboratory medicine, microbiology and TCM diagnostics shows that sleep disorders are very often associated with hidden infections, organ dysfunctions and disorders of the immune system. However, only by monitoring the success of the treatment of infections and organ dysfunctions can we find out

whether the suspicions about the cause of sleep disorders are confirmed. For if the treatment of the named physical causes leads to a considerable improvement in sleep, the gentle therapy of infections and organ dysfunctions that have not been taken into account so far can be an alternative to conventional treatments that often cannot prevent chronic courses of sleep disorders.

6 Summary

The aim of the present study is to observe the connection of patients with chronic sleep disorders (insomnia) with organ dysfunctions and the causal chain of their development by means of TCM diagnostics. The study thus aimed to better understand the development and chronification of sleep disorders in the process of a progressive chain reaction.

Chronic sleep disorders in general stand on the tail end of a physical process. They are the result of a progressive chain reaction. In this process, an infection-related

spleen overload can lead to a kidney overload (spleen-kidney yin weakness). This is combined with digestive disorders and other organ dysfunctions (liver and heart) in interactions. The purpose of the study was to examine the processes and their interactions with regard to the order of their sequences and to observe the connection between chronic sleep disorders and organ dysfunctions from the perspective of Traditional Chinese Medicine.

With regard to a validation of the therapy by the examining and treating physicians, 166 patients of a medical centre were examined in parallel by means of pulse and tongue diagnostics in a TCM practice.

As expected, cumulative organ dysfunctions were found in chronic sleep disorders, i.e. disorders of the kidneys (in 95 percent of patients), liver (in 58 percent), spleen (in 42 percent) and heart (in 23 percent). In combination, weakening was observed in kidney and liver (27 percent), kidney and spleen (20 percent), kidney and heart (ten percent); kidney, spleen and liver (18 percent), kidney, liver and heart (ten percent) and kidney, spleen and heart (two percent).

The results show that chronic sleep disorders and infections are very common with multiple organ dysfunction. So if the treatment of infections and organ dysfunctions leads to an improvement in sleep, antimicrobial therapy of neglected or unrecognised infections in combination with individual treatment of organ dysfunctions, also through measures of Traditional Chinese Medicine, can be an alternative to treatment

methods that often do not achieve sustainable results. And early treatment of spleen-kidney-yin weakness can prevent the accumulation of organ functions and thus prevent sleep disorders.

The treatments following the diagnosis by the medical centre and the TCM practice were not the subject of the study. The evaluation of the results of the available observational studies and the monitoring of the treatment successes (24) is therefore reserved for a meta-analytical consideration.

Notes

Note 1 Cf. the integrative combination of specialist and laboratory medicine with microbiology and TCM as developed by Normamed in reinforcing causal medical diagnostics and therapy (<https://www.normamed.com>).

Note 2 In the present study, “chronic sleep disorders” mean all disorders that have existed for more than three months (2) Cf. otherwise (5) and (6).

Note 3 Cf. in this respect and in the following descriptions of the diagnostic patterns (7).

Note 4 Cf. as an example of liver damage: (22). This demonstrates that due diligence in researching the possible effects of drugs on organs is no less important than evidence-based medicine when investigating the side effects of pharmaceuticals.

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