3.5 Mistletoe therapy

Rudolf Steiner introduced mistletoe therapy to oncology. Since then, numerous studies based on basics as well as clinical research have been completed that document the *efficacy* and *current therapeutic options* of the available mistletoe preparations.

3.5.1 Mistletoe and cancer

A carcinoma originates from superficial, epithelial structures and grows through infiltration and ultimately through metastasis into the organism. It is a centripetally oriented disease process. The necessary therapeutic principle must counteract this invasion of a foreign quality into the organismic integrity with the *creation of an own space.*

The leaf organization of a 'typical plant' is characterized in its gestalt and function by an openness to the surroundings. The immediate environs (conditions of light and warmth, air moisture, salts, etc.) and the broad environs (e.g. heliotropism) have an impact on the plant organism (metabolic processes of photosynthesis, leaf shape). For this Grohmann has found the appropriate image of a 'light-sense organ of the earth'.

In contrast to this, mistletoe shows a totally different typology. It develops a *demarcating, spherical gest* emancipates itself in space and also from gravity, and gains an *autonomous space* through this *spa emancipation.* This gestalt feature of demarcation continues in the life rhythms of mistletoe that segreg themselves from the generally typical development sequence of the plant world.

Not only the space gestalt but also the *time gestalt* of mistletoe segregates itself from the surrounding wo *Temporal emancipation* is added to spatial emancipation. Rudolf Steiner repeatedly pointed out this temp aspect of the special status of mistletoe, in context with a description of its effectiveness. During summer, 't 'peculiarity' is supported by its 'shadow existence' within the foliage of the tree that embraces it in an enfold and protective manner. Mistletoe, in its striving for autonomous space, follows a natural law that norm belongs to ensouled living beings with their formation of an internal space. Mistletoe is no longer the se organ that, in the plant world, opens itself selflessly to the environment; rather it develops a demarcati segregating quality.

Carcinoma as a 'tendency to sense organ formation in the wrong place' is opposed by the demarcating qua of mistletoe that emphasizes an own space as a therapeutic Principle.

This active principle of mistletoe 'orchestrally' integrates the individual functions of the analytically access active substances. The effect of mistletoe is, therefore, not related to individual active substances includes the whole composition of the medicinal plant that encompasses more than an individual substan

3.5.2 The polar effects of mistletoe

The *polar actions* of mistletoe are immediately apparent in its therapeutic use. On the one hand, inflammat reactions appear (e.g., locally at injection sites, but also with the appropriate dosage and route administration as febrile, systemic inflammations), on the other hand, fibrous indurations and scler processes are observed (e.g., palpable indurations at injection sites, an increasingly coarse tumour as a re of intralesional therapy). What are the relationships between these polar effects?

The relationship of the soul to the living develops ¡n two ways: the effect of the upper constituent elements is

the one hand, connected to *catabolic metabolism processes.* On the other hand, the upper constituent eleme
can form and guide the *anabolic maintaining and regenerative metabolism.* In the inflammat
processes that are stimulated by mistletoe, catabolic metabolism processes develop (day side of the mistle
effect,

Inflammatory phase). The modelling and formative effect of mistletoe belongs to the subsequent night side of inflammation and can lead as far as the formation of a fibrous capsule around the tumour (corresponding to a segregating 'head formation'). The mistletoe quality of developing an own space is found again in both effects:

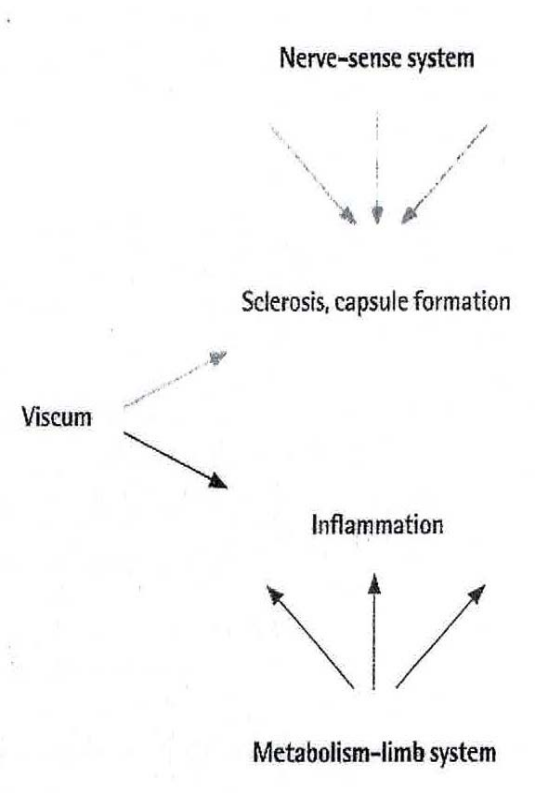
Through an inflammation, the organism asserts its identity by overcoming foreign matter via inflammation. Through the *formation of a* capsule, the organism isolates the insurmountable foreign matter (foreign body reaction). *Mistletoe* seizes the quality .of the metabolism-limb system through inflammation and it seizes the quality of the nerve-sense system through capsule formation. [see fig] Both serve the *formation* of an autonomous *space.*

The *catabolic action* of mistletoe is, among others, associated with the substance groups *viscotoxins* and *pectins.* Extensive catabolic processes pertain to both, the former show a rather cytostatic, the latter a cytostatic quality due to the inhibitory influence on protein synthesis with hydrolytic cleavage of ribosomal RNA by the A-chain and, therefore, an inhibitory effect on transcription. An potency is thereby achieved that has already in earlier studies been compared to the potency of cyclophosphamide.

e *catabolic quality* is linked with pro-inflammatory *and* inflammatory processes.

This *inflammatory action of mistletoe* is opposed by *a sclerosing, capsule-forming quality.* This quality has also been researched on various occasions. Nienhaus and Leroi documented in a series of experiments (Ascites sarcoma 180 cells), in addition to the enlargement of the spleen and thymus, the encapsulation of a tumour as a result of mistletoe therapy. Seeger, too, found a fibrous encapsulation of tumours with intense lymphoplasma-histiocytic infiltration that was proportional to the mistletoe concentration used. On various occasions, a cell-rich granulation tissue that forms around the tumour has been reported.

The observations by Heine concerning these *encapsulation processes* that are a reaction or the extracellular matrix to mistletoe therapy are also included here. Biopsy samples of human carcinomas were incubated in mistletoe preparations. Through this process an increase ¡n fibronectin, a better preservation of the structure of proteoglycans and collagens as well as a stabilization of the basement membrane surrounding the ducts in breast cancer tissue were registered.



Polar effects of mistletoe against the background the threefold structure were registered.

Under *mistletoe therapy,* the organism obviously **successfully** *recognizes* the *malignant neoplasm* again as '***foreign'*** and ***segregates*** it through *encapsulation.*

The next crucial stage has only been communicated via case documentation[92], respectively suggested through animal experimentation: the *re-differentiation* of a malignant neoplasm. Heusser[93] reports on a study on mice by Hurni that describes, alongside tumour reduction and encapsulations by an inflammation-infiltrated granulation tissue and connective tissue under mistletoe therapy, a reduction in the degree of malignancy (size of tumour, invasive growth, atypia or polymorphia of tumour, number of mitoses). Thus, the potential of mistletoe to be effective in terms of re-differentiation, for which there has been relatively little research, has been outlined. The *triterpenes*[94] in the mistletoe substance called 'glue-like' by Steiner, which have been increasingly investigated in recent years, belong in this context.[95] These substances that are obviously not acting via inflammation seem to belong to the night phase of the mistletoe effect. They are possibly able to promote cell differentiation and to induce apoptosis.

In this context, it is important to develop a more comprehensive concept of *apoptosis* than the 'suicide of the cell' suggests. When the gestalt metamorphosis from a tadpole to a frog with the loss of the tail and the formation of a limb organization occurs or when, from the plump form of an embryonic hand rudiment, the fingers are formed by developing interstices, it is done through apoptotic changes in the tissue.

Hence, it becomes obvious how *formative processes* in nature that fit into life processes 'are accompanied by a*poptotic changes* on a *physical level.*

The shaping and forming of the human organism that is associated with the nerve-sense system becomes apparent in the phenomena of tissue differentiation and apoptosis. In contrast to them is the inflammatory tissue destruction as an inflammation process that belongs to the metabolism system. Mistletoe lectins and also triterpenes can induce apoptosis.

Furthermore, the occasionally shown *neoangiogenesis-inhibiting effect* of mistletoe belongs to the *night phase.*[96] Therefore, the night phase of the mistletoe effect refers to the impact on pathological tumour growth (apoptosis induction), demarcation and segregation of the tumour through capsule formation, inhibition of tumour-inherent angiogenesis[97] and, finally, to the possibility of re-differentiation, about which there has been little research.

Due to its *polar effect, mistletoe* fits into the dynamic picture of an inflammation process: the mistletoe-induced *inflammatory phase (`acute inflammation')* is followed by a *regenerative, formative' re-differentiating') healing phase.* In the case of *chronic inflammation,* a *capsule, forming, sclerosing quality* develops [see fig.]

Both these phases are found in patients' experiences. The 'inflammatory' mistletoe effect can be accompanied by an increase in temperature and occasionally also by the sensation of having the 'flu', in contrast to its regenerative effect with an improvement in the quality of life (psychological condition, fatigue, pain, appetite and sleep).

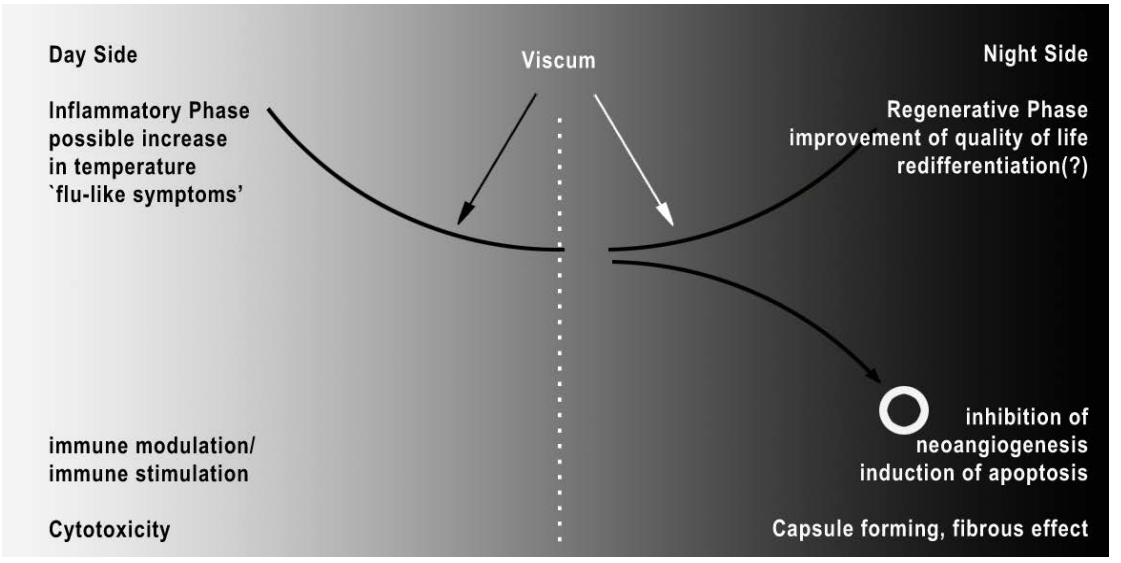
3.5.3 Therapeutic effects of mistletoe

Mistletoe comprises several therapeutic processes that fit within its spectrum of actions [see fig.]. This includes the

. Cytotoxic action.

- *Induction of apoptosis*
- *Immune modulation/stimulation*
- *Antiangiogenetic effects*

Thus, processes become apparent that are related to *numerous oncological therapeutic principles.* However, while these are attributed to individual substances (e.g., the antiangiogenetic effect of Bevacicumab, immune stimulating therapeutical principles [e.g., interferons]), mistletoe, as a healing plant with a typological equivalence to cancer, cornrises all these various 'tool functions'.
Through this example, it becomes clear that a medicinal plant must correspond to the nature of the disease process and healing process. The dissection into individual 'active substances' isolates the 'tools', the embracing therapeutic principle is lost. Accordingly, in vitro tests show an overly additive effect of the various mistletoe components in their synergistic action. For example, when mistletoe lectin 1 and mistletoe vesicles are administered together, a tenfold higher CD 4 lymphocyte stimulation in patients pretreated with mistletoe is found than with sole stimulation by monocomponents.



The polar spectrum of the effects of mistletoe

3.5.4 Clinical evaluation of the efficacy of mistletoe

The evaluation of the efficacy of mistletoe in patients comprises several levels that are related to the constituent elements of the human being.
The mistletoe's tumour-related cytotoxic or cytopathic effect belongs to the *physical organization.* It is documented by *changes in tumour size* under a (e.g., intralesional) mistletoe therapy.
The day side and night side of mistletoe action are found on a *processual level.* While the day side of the mistletoe effect can be accompanied by catabolic actions that also weaken the patient in the case of high dosages, the night side is associated with anabolic, regenerative qualities, *recuperation* and possibly also *stimulation of appetite.*

An *improvement of the general condition* is shown on the *soul level.* Waking and sleeping are associated with the astral level and, therefore, with observable improvements in daily activity and sleep under mistletoe therapy. An improvement of the cancer fatigue syndrome also points to this level

The effects of mistletoe therapy are ultimately related to the *Ego-organization.* This includes ramifications for the *warmth organism.* On a soul-spirit level, an enhanced presence of the personality can develop. The powers of courage to accept a difficult task are in contrast to anxiety and fear.

The various dimensions of the mistletoe effect justify an indication for mistletoe therapy not only in prevention and therapy of the established disease but also in its palliative stages.

3.5.5 Main features of the manufacturing process of anthroposophical mistletoe-preparations

The two effective phases of mistletoe therapy also illuminate the *manufacturing process* of mistletoe preparations. Rudolf Steiner's suggestion consists of the use of slimmer and winter juice. In relation to a seasonal rhythm, winter mistletoe seems to emphasize the day side. Conversely, the vegetative, living side of mistletoe essence manifests itself during summer shaded by the tree foliage — its night effect.

During the *manufacturing process* of anthroposophical mistletoe preparations, winter and summer extracts (from the winter and summer harvest) are blended in a special apparatus using high-speed revolutions by adding the summer extract dropwise to the rotating winter extract.

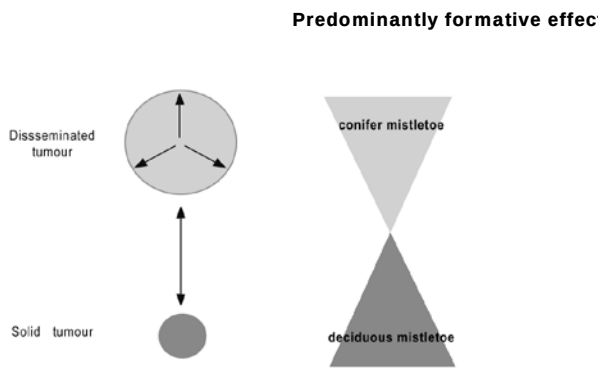
In terms of harvesting time, extraction procedures and the blending machines used, there are considerable differences between various manufacturers. The relationship of mistletoe to the etheric organization prevails in the non-fermented *aqueous extract,* while in the *fermented extract* (acid environment) the relationhip to the astral qualities, which have an impact on the plant organization, prevails. Particular extraction procedures determine different compositions of mistletoe juice: in comparison to the fermented extract, the aqueous extract normally contains less viscotoxins (and therefore substances that are related to cobra toxins) and more lectins. The suggestion of Steiner to include the glue-like substances of mistletoe in the manufacturing of the preparations has not yet been implemented. These include the various triterpenes with tumour-relevant effects (inducing apoptosis, reducing chronic inflammation, indicating redifferentiating properties).

3.5.6 Choice of host tree

The question regarding the choice of host tree is, to this day, the subject of intense discussions and yet has been hardly systematically researched. Personal experiences and distinct conceptual views lead to different approaches in therapeutic practice. In the following, some aspects concerning the choice of host tree will be presented, which specifically focus on the relationship of the host tree characteristics to the different processes of cancer and the salutogenetic processes that have been invoked by the organism. These aspects have until now defined one's own therapeutic practice. This is still a major area for future research.

The polar qualities of the mistletoe effect have a relationship to the *host trees. Deciduous* and *pine mistletoes* are polar to each other, mediated by fir *mistletoes.* Deciduous

trees develop intensive metabolic processes that direct light and air into the substance formation of the leaf organization, in comparison pines with their needle-shaped 'leaf organization' develop form and design. The scion sections of conifers are generally very short so that needles are directly placed beside each other. For this reason, conifers are governed by forces that 'carry inhibition into the unfolding of life and rigidity into the design'. Deciduous mistletoes specifically address the metabolism processes of an acute inflammation, while pine mistletoes rather address the formative qualities.



Aspects concerning the choice of host tree based on the growth characteristic of the tumour

- *Polarity in tumour growth*

The *growth of a tumour* can lead, on the one hand, to *induration* with a coarse, palpable mass. On the other hand, there is a 'centrifugal' *tumour dissemination* that already in the early stages causes the tumour to become a systemic disease. This applies in the case of epithelial tumours, for example, to non-small cell lung cancer and also to pancreatic cancer. Based on conceptual considerations, a solid, sclerosing tumour that is linked to a desmoplastic stromal reaction requires an inflammatory mistletoe effect. In contrast, a disseminated tumour requires a formative mistletoe effect [see fig.].

Deciduous mistletoes are suitable for the stimulation of *inflammation processes* and for supporting the *warmth organization. Pine mistletoes* support the *formative forces in disseminated tumours.*

- *Dedifferentiation: Pathology of form*

In addition to tumour growth, the *'pathology of form'* can be important for the choice of a host tree. The tumour must again experience the structuring and appropriate configuration through the 'tissue periphery' and the tumour's original tissue. This involves the formative night phase of the mistletoe action in which the structuring qualities are to be brought to the dedifferentiated tumour growth in an 'archetypical manner. The correspondence of the tissue functions with the gestures of the host trees can lead to the choice of the host tree. Referring to the following conceptual aspects, it should be noted

that mainly the night phase of the mistletoe action should be addressed. In a lot of the tumours subsequently mentioned, the action that increases the inflammatory day phase might also be required and, for example, intermittently replaced by a mistletoe belonging to the night phase. This is the reason for the sequential use of mistletoes from different host trees.

Conifers (pine/fir) have an intense relationship to formative forces. Their organization is particularly concentrated on the formation of wood, their middle system is shaped for the formation of needles and their 'fruits' through to the formation of cones are hardened A flower-related, aromatic quality is found 'hidden' in the formation of resin. The inflorescences that correspond to the metabolism-limb system in the threefold structure of the plant (a conifer cone is a small inflorescence, each cone scale corresponds to a flower that is reduced to a single leaf) are guided towards hardening. Accordingly, conifer mistletoe can support the formative forces of tissues, which are linked to the nerve-sense system and its metamorphoses (e.g., nervous system, lymphatic organization, spleen). Thus, pine mistletoe is used in the *treatment of lymphoma [XV.* 4. Therapeutic aspects]. When it is not the inflammatory action by deciduous mistletoes, but the formative quality that needs to be straightened, then a conifer mistletoe should be considered.

The *maple* incorporates itself harmoniously within the surroundings and carries form and design into the life organization. Unlike in conifers, a leaf blade with a large surface develops which experiences form and differentiated design in its life processes. In some respect, there is a correspondence to the life processes of the liver that are structured **In** a differentiated way. As an exocrine gland, the liver is connected with anabolic metal. lism processes. The *gland organization* not only knows the mostly catabolic, secretory activity (day phase) but also the comprehensive, anabolic life processes of gland regeneration and processes of synthesis 5.1.2 Functional and maintenance metabolism of exocrine glands].

These two polar qualities of the glandular function are particularly clearly disti guishable in the *anabolic metabolism of the liver* and the *gallbladder organization* **that k** associated with catabolic processes. Under this aspect, the maple mistletoe is related **to** the anabolic night phase of the glandular function, the subsequently described oaken tletoe is related to its day phase. It can therefore, be used in hepatocellular cancer. **Positive** experiences have also been reported in pancreatic cancer.'° Those tumours that are part of the liver, thyroid and nervous system metamorphosis should also be considered

XIII. 3.1 Liver-thyroid-frontal lobe metamorphosis].

The *oak* no longer incorporates itself into the surroundings, rather it emphasizes **the** individual space and impressively guides the tree gestalt into a 'gnarled' solidification. It has its equivalent in those processes of the organism that do not assimilate anything **S-ternal** in the way a sense organ would, rather oppose it through catabolic processes **and** processes that strive for solidification and, thus, claim the internal sphere. This involves the excretory gland organization of the gastrointestinal tract and here, in particular the gallbladder organization with its bile, which is consolidated via the liver into gallbladder bile and is increasingly lithogenic. The *gallbladder organization* is in a metamorphotic connection with the larynx XX. 2.2 Gallbladder organization and larynx]. Therefore, the oak mistletletoe should be considered not only in cancer of the gastrointestinal gland organization and presumably also of the oesophagus but also in cancer of the larynx. While id maple mistletoe rather reaches the 'internally' located exocrine **gland** and its **anabolic** metabolism processes, the oak mistletoe is associated with the excretory gland **function** that is directed to the outside and has a catabolic effect.

The *ash,* with its mediating quality, places itself between the hardening and formative forces of the oak that emphasizes its autonomous space and the subsequently &scribed birch that 'gives itself selflessly' to the surroundings. The wood of the ash hard and resilient, the leaves are feather-shaped and compound. Ash is deeply **rooted**

the darkness of the soil and strives in its vertical growth for the light, which it absorbs intensively and expresses through its light wood colour. 'The ash, in contrast to the beech, allows light to sweep clown to the ground so prolifically that a rich plant life develops in the undergrowth, Kranich describes. The ash mediates in the human organism between light and life forces, that is, between the upper and the lower constituent elements, which have separated during cancer development. *Ash mistletoe* develops a special relationship to warmth that mediates between light and life. Due to its richness in lectins, it is particularly connected with the inflammatory-warming day phase of the mistletoe action.

The *birch* is in contrast to the oak. It develops an open gesture to the surroundings and an intense relationship to *light.* In its leaf organization (in contrast to bark), it directs light to the anabolic life processes. It is functionally associated with those processes in the organism that do not claim an own space but turn to the environment and direct light and warmth to its life processes. The sensitive skin absorbs light in a special manner and guides it, for example, to the light dependent (vitamin D) metabolic processes XXV. 3.1 Preventative measures]. In this respect, indications for the use of birch mistletoe arise for malignancies of the skin including melanoma. B. von Lane has published an impressive case documentation for melanoma. However, it also includes the 'transformation' and mediation of the consciousness oriented nerve-sense system effect in the anabolic processes of the metabolism-limb system. This mediating function is linked with the *kidney organization* XXII. 2.5 The kidney and respiration]. Thus, birch mistletoe should also be considered in the case of renal cell carcinoma.

While the birch carries in its gestalt an accommodating and receiving gesture, the *elm* develops a quality that mediates between the internal and the external sphere and, therefore, develops a relationship to the processes of breathing. Coming out of a sturdy trunk, the strong branches seem to dissolve and 'consume themselves' in a multitude of twigs, which can develop an intense play of movement with their short-stemmed leaves. Julius phrased it as 'the elm's essence is movement The relationship of the elm to *air* and to the processes that mediate between the internal and the external sphere leads to the therapeutic use of elm mistletoe for tumours of the breathing organization. Favourable courses in bronchial carcinoma were documented under elm mistletoe therapy.

Compared to the mentioned host trees, the *apple tree* emphasizes flower and fruit development in a special way and, therefore, those areas in the threefold plant structure that are related to the metabolism-limb system (IV 3.2 Medicines from the plant kingdom). They are not catabolic, but rather anabolic metabolism processes and they lead to an intumescent fruit development. Hence, the apple tree mistletoe is particularly connected with 'those organs that are linked to *regenerative life processes.* It can be used for gynecological tumours, especially for breast cancer.

This results in a classification of host trees that is guided by the threefold structure of the organism by connecting the conifers predominantly with the nerve-sense system and the deciduous trees predominantly with the metabolism-limb system *[see* fig.]

- *Polarity in the inflammation process*

The different host trees not only determine the *night phase* of the mistletoe action, but also its *inflammatory day phase.* The nearly lectin-free pine mistletoe is linked with a qualitatively different inflammatory effect as compared to, for example, the very lectin-rich ash mistletoe. The inflammatory day phase comprises its modulation and configuration (nerve-sense system), its metabolic activity (metabolism-limb system) and its. rhythm
(rhythmic system) [see fig]V. 23 Chronic inflammation and sclerosis/carcinoma] Conifer mistletoes
will support the formative function, deciduous mistletoes the inflammatory metabolism

processes. In the subsequent regenerative night phase, the strengthening of the formative qualities of the tumour periphery and the original tissues becomes essential. They are related to the life processes of the different host trees and justify the choice of host tree [see fig.].

Pine	formative life processes	e.g. lymphoma
Maple	harmonizing and structuring life processes	e.g. hepatocellular carcinoma, pancreatic carcinoma
Oak	catabolic and life processes that emphasize autonomous space	e..g, cancer of the gastrointestinal gland organization, bile duct cancer
Ash	harmonizing, warmth-related life processes	in particular for strengthening the day phase of the mistletoe action
Birch	anabolic life processes that are oriented on light and surroundings	e.g. for skin tumours
Elm	life processes that mediate be-Sween the internal and external	e.g. for tumours of the breathing organization
Apple	[re]-generative life processes	e.g. breast cancer, gynecological tumours

Selected mistletoe host tree and conceptual aspects referring to their differential therapeutic use

In addition to the listed host trees, there are other trees that are used in oncology (e.g., positive therapeutic experiences have been reported for poplar mistletoe when used for prostate cancer) and also in rheumatology[XXIV. 6.1.4 Pharmacological treatment].

In summary, the quality of the *salutogenetic process* that needs to be supported is the focus in terms of the choice of host tree. This salutogenetic process consists, on the one hand, of the inflammatory day phase of the mistletoe action and, on the other hand, of its night phase. The inflammatory process can be intensively strengthened with lectin-rich ash mistletoe, in particular at the beginning of therapy. When later, during the further course of therapy, the necessity to change the therapy arises due to a diminishing local reaction and lack of effectiveness on the circadian temperature curve, then another deciduous mistletoe can be chosen. The combination of mistletoe preparations from different host trees and their route of administration can also be considered. Furthermore, Wilkens has described the constitutional aspects.

In summary, the following decision levels currently arise in the choice of host tree:

- Proven individual indications
- The salutogenetic processes that should be strengthened (day phase and night phase of the mistletoe effect)
- Constitution of the patient

Part of a patient's constitution is gender and also vitality and, therefore, the evaluation of the etheric constitution. When this is weakened, conifer mistletoes should rather be administered. Some patients have an internal 'evidence' for the host tree and they are able to evaluate various host trees as part of the use of mistletoe preparations.

These different criteria are greatly influenced by individual points of view and personal medical experience and they indicate an important field of future mistletoe research

On the other hand, the choice of host tree has a considerable therapeutic relevance and can have a decisive impact on a therapeutic reaction.

Case documentation

This case involves a now 67-year-old female patient who ten years previously, due to an *adenoid cystic carcinoma* of the left parotis gland, had a total paridectomy and neck dissection on the left side, resection of the facial nerve with a sural nerve graft and tarsal strip procedure with subsequent radiation. Also worth mentioning from her medical history is a thyroidectomy due to thyroid cancer 15 years ago.

14 months ago, the patient was hospitalized to investigate a focal pulmonary abnormality that was accompanied by increased exertional dyspnoea, sensation of pressure thoracically and dorsally as well as dry cough. In the thorax CT scan an inoperable mass was detected with 'partly extensive, partly disseminated nodule-like pleural deposits with suspected infiltration of the diaphragm and disputable infiltration of the peritoneum; mediastinal infiltration'. These lesions were histologically identified as metastases of the adenoid cystic carcinoma that had been operated nine years previously. The growth fraction was 5% to 10%.

As conventional oncological treatment options of this tumour entity are limited and the natural progression is rather insidious, 'watchful waiting' is recommended in the case of only mild symptoms — as in our case.

We started *mistletoe therapy* with *Abnobaviscum pini* 0.02 mg 3 x weekly s.c., which was increased after two weeks to 0.2 mg. She received *Cuprum aceticum D4* dil. (Weleda) 3 x daily as well as *Paracodein drops* as required against the *dry cough.* With this treatment, the patient already felt a clear improvement in terms of her dyspnoea and thoracic pains after six weeks. The mistletoe therapy was slightly increased to Abnobaviscum pini 2 mg 1 x weekly and 0.2 mg 2 x weekly.

After three months of treatment, the CT scan showed a significant improvement of the medical findings: the thickness of the extensive pleural deposits was reduced from 23 to *17* mm and also the circular lesions that were partly pleurally located, partly intrapulmonary disseminated showed a reduction in size (e.g., from 38 x 27 to 29 x 25 mm).

Five months after treatment began, the patient was hospitalized as an emergency because of severe right-sided thoracic, respiration-dependent pains that had started the day before as well as dyspnoea. A pulmonary embolism could be excluded in the CT angiography of the thorax. The result was unchanged in relation to the tumour manifestation. As a neuralgiform pain due to irritation of an intercostal nerve was the most likely cause, we treated it with daily local s.c. injections of *Aconit D6* and *Rhus toxicodendron D6* and the pains promptly improved and conventional analgesics were not needed.

The patient had complained about a state of exhaustion during that period and this was reliably improved by s.c. injections of *Levico comp. (WALA).*

Seven months after treatment began, the mistletoe therapy was increased to Abnobaviscum pini 20 mg 1 x weekly and 2 mg 2 x weekly. After eight months, the restaging CT scan showed a stable disease. Aconitum and Levico comp. were continued

unchanged during this time because of the positive effect obviously being experienced by the patient.

Eleven months after treatment began, the pains had again somewhat increased and the CT scan showed a progression (e.g., increase of the pulmonary circular lesions from 48 x 20 mm to 52 x 26 mm or from 40 mm to 51 mm).

The therapy was then changed to *Iscador U c. Hg.* 10 mg 2 x weekly and 20 mg 1 x weekly (ratio: several case reports about a positive effect of elm mistletoe in bronchial cancer and the gestalt relation of this tree to the air element). Furthermore, *Helleborus Nig P1 Tot D4* dil. (prescription preparation [e.g. Apotheke an der Weleda]) was added. Four weeks later the pains had completely disappeared. The mistletoe therapy was again increased to *Iscador U c. Hg. 20 mg* 2 x weekly and 10 mg 1 x weekly. The repeated CT scan nearly three months after the change of host tree resulted in a slight improvement of findings in terms of size reduction of individual lesions (e.g. from 56 mm to 53 mm) and complete regression of a 10 mm large lesion. Most of the lesions were consistent in size.

Overall, the progression so far shows a clear response of the disease to the mistletoe therapy with improvement of the medical findings already three months after therapy began, morphologically proven by CT scan, and the disease was stable for at least a further six months. When after eleven months another progression was again detected, an improvement of findings, again within three months, could be achieved through a change in host tree and the addition of Helleborus, which is related to thoracic tumours. Furthermore, it is remarkable that a significant clinical improvement, which correlated with a morphological regression of findings, occurred each time after a few weeks. The choice of host tree obviously had a decisive impact on the response.

3.5.7 Dosage of mistletoe therapy

The *mistletoe therapy* that is already at the beginning of treatment *highly dosed* is in contrast to the usual practice of treatment with *low initial concentrations. There* are several indications with regard to the meaningfulness and justification of the low-threshold to middle-threshold therapeutic form. Most of the studies on mistletoe therapy were not carried out with high doses but were in the middle to low range and showed the recorded effect.

On the other hand, there is clear evidence for high-dosage therapy. For example, pleurodesis is achieved with high-dose Viscum applications and the intratumoral injection with a higher dosage seems to be associated with a positive development. The closer this dose can be given to the manifested tumour, the more effective it seems to be. Partial remissions can be achieved through intralesional therapy *[see* below]. The tumour can also become increasingly coarser through capsule formation and fibrosis. This quality that follows the acute inflammatory stage should not be disturbed by a temporally too close mistletoe application. The temporal gestalt of the mistletoe effect must be taken into account.

3.5.8 Local reaction.

A *subcutaneous mistletoe therapy* should initially lead to a maximum 3 to 5 cm wide local reaction. This usually decreases during the further course of therapy with the result that higher mistletoe dosages are tolerated. The described polarity of the mistletoe effect is shown in different local reactions: the frequent erythematous, inflammatory skin reactions are in contrast to the nodule-shaped, indurating local reactions.

An unexpectedly intense *inflammatory local reaction that requires treatment* can be alleviated with

- QUARK COMPRESS

When itching occurs, also at 'former' injection sites, in connection with an increased dose of mistletoe therapy, then a smaller mistletoe concentration should be chosen in order to avoid a threatening systemic reaction.

3.5.9 Temperature reaction

A responder analysis in mistletoe therapy by means of a circadian rhythm of the body temperature was clinically monitored for the longest period= and has repeatedly proven itself valuable when consistently applied. A flattened curve with a circadian fluctuation in temperature of less than 0.6 °C is often shown in oncological patients. Under mistletoe therapy (s.c., two to three injections weekly) there should be a difference in temperature of 0.5 °C to 0.7 °C (first reading at 7 am, second reading at 4pm to 5 pm, individual mini-ma/maxima must be determined before, if necessary by multiple readings). In clinical practice, dosage optimization shows a better correlation with therapeutic progression than the numerous tested laboratory parameters and various lymphocyte subpopulations can achieve.

3.5.10 Time of therapy commencement and duration of therapy

Mistletoe therapy should begin as early as possible and can already begin before an eventually planned operation. In terms of the perioperative therapy commencement, it could be shown that the inhibition of the granulocyte function, which is associated with surgery/anaesthesia, can be significantly improved with a singular (intravenous) mistletoe application. Following this, mistletoe therapy can usefully complement an adjuvant chemotherapy or radiation.

Another question is the often discussed *preventive mistletoe therapy.* It should certainly be assessed as problematic when cancer is not suspected. However, also before a histologically confirmed malignancy, it gains significance through the following consideration. For example, a breast cancer with a tumour-doubling period of between 23 and 209 days, on average 120 days, has existed unnoticed for 10 years before the diagnosis of a 1 cm tumour. This 10-year period is often longer than the survival time from the date the cancer is diagnosed. Mistletoe therapy would be especially important at the time when the tumour mass is still small.

For this reason, in addition to the physical disease manifestation, one should pay attention to the appearances of cancer that, for example, present in the warmth organism as an impaired circadian rhythm or as a case history with little fever or that can also be expressed in the constitution of the soul. *Diseases with such disposition,* as they often

exist in chronic inflammations, pose the question of mistletoe therapy. Obviously in this context, *the family anamnesis* is also very important.

> Rudolf Steiner described the early spiritual-scientific result in the case of breast cancer in a *question and answer session* from the year 1924. Following the already presented topic, it consists of the detachment of the upper constituent elements and is described in the spiritual observation as well as transposed into a therapy as follows: Now in this case, the astral body, which is normally absorbed by the etheric body, appears very strong in this location. When the astral body suddenly appears in the location, then it shows itself, I would like to say, as if in a glowing light, it appears as if it is burning. When it is thus noticeable, then one has in this location the tendency to the formation of a sense effect and a carcinoma develops here. There is no question that one can start at least with the first seven vaccination

The *duration* of mistletoe therapy depends on different aspects. In the case of a *relapse-free course of the disease,* the generally three times weekly mistletoe injections are carried out over several years. Then therapeutic breaks are suggested, in which the circadian temperature rhythm is documented and the subjective state (soul-spiritual condition, warmth organism, vitality, appetite, sleep and physical constitution) is questioned during the mistletoe breaks.

In the case of a *manifest and progredient disease,* mistletoe therapy is usually carried out without therapeutic breaks. When a deciduous mistletoe is used for extended periods, the already mentioned change of host trees can lead to the use of pine mistletoe and vice versa. The mistletoe lectin 1 profiles (IgG 1-4 antibodies) can be helpful in this context, as increasing concentrations of ML-1-IgG (2) and (4) indicate an increasingly TH2-dominated immune response, which can be compensated by the use of a preparation that is low in mistletoe lectin. The clinical relevance of these recommendations is a theme of mistletoe research.

An *eosinophilia in* the differential blood count should be achieved at the *beginning of mistletoe therapy* as well as in the case of a *disease progression.* The association of a tissue eosinophilia and (less conclusive) also a *blood eosinophilia* with a more favourable tumour prognosis has been known for a long time.

Eosinophilia is not only in the sense of the 'old clinicians' the 'dawn' and, therefore, the announcement of recovery from a severe infection, it also seems to have a prognostic significance in oncology and to be essential for mistletoe therapy (we owe important observations in this regard to Broder von Laue). A multitude of immunological parameters were tested in correlation to tumour progression. It was shown that there are no simple correlations.

In the case of the severely ill and dying patient, the necessity for a further mistletoe therapy has been repeatedly discussed and exposed as problematic, with the argument that 'nothing more could be changed in the course of the disease. In contrast to this, one is repeatedly surprised about the determination of patients who insist on *continuing* this therapy. The improvements in the physical and soul-spiritual state that can be achieved in this situation are possibly important in this regard. The roborating effect of mistletoe infusions in cancer cachexia should also be noted in this context.

Through this therapy, a person experiences *support* of his or her disease-overcoming forces that unfold in the body up to the moment of death. Accompanied by the therapeutic measures of Anthroposophical Medicine for the dying person [XVII. 4. The medicinal requirements of the dying person', a humanly impressive process that correponds to the dignity of

the sick person can be achieved, which then releases the patient from the disease in the moment of death.

The therapeutic dosage can be a lower concentration in a dying patient. The same also applies for other remedies. In particular, the often reduced need for morphine should be remembered. A once useful dosage should certainly not be 'automatically' maintained.

3.5.11 Implementation of mistletoe therapy

Most of the studies on mistletoe therapy have been undertaken with *subcutaneous injections* for which the various mistletoe preparations have a marketing authorization. In addition to this, further routes of administration follow. The *intravenous injection* (as an individual therapy agreement) has proven valuable during the administration of chemotherapy. Mistletoe intravenous drips are also an option in the case of a progredient disease. However, no clinical studies are yet available for this, apart from personal experiences of some oncological colleagues.

Important methods of application are the *intrapleural* and *intrapericardial Viscum therapy* (as an individual therapy agreement) that will be separately treated. The same applies for the *intralesional Viscum application t-* 3.5.14 Intralesional mistletoe therapy] and the use of mistletoe in radiofrequency ablation.

In terms of *oral mistletoe therapy* (e.g. Iscador Pini $3^0$4, experiences to date have been published from cases and case documentations in brain tumours of adults and children, which show at times impressive therapy progress.

3.5.14 Intralesional mistletoe therapy

Intralesional Viscum therapy can lead to impressive results. Scheffler et al. described in 1996 the complete remission of an oral cavity cancer after several intralesional mistletoe applications. In the meantime, several sometimes impressive single case reports have been published. Experiences currently exist with intratumoral mistletoe therapy in oropharyngeal cancer, esophageal cancer, colon cancer, bronchial cancer, pancreatic cancer (endosonographic intralesional application] · breast cancer, duodenal cancer, melanoma and in hepatocellular carcinoma. A promising intracavitary application has been described for bladder cancer.

Steiner demanded the 'covering' of the tumour in a 'mantle of warmth' to which the intralesional VA application corresponds in a special way. The Ego-organization and the astral organization become intensely connected with the tumour and also with the peritumoural tissue and they develop their inflammatory (day phase) and formative (night phase) effectiveness. A sometimes considerable proinflammatory reaction ensues and, subsequently, the condition often improves in comparison to the time before the start of therapy. In relation to the tumour, apoptosis and necrosis are induced by tumour tissue. A release of tumour specific antigens, due to cell destruction, possibly occurs with the induction of a tumour-specific immune response ('autovaccination').

3.5.15 Overview: Clinical studies on mistletoe therapy

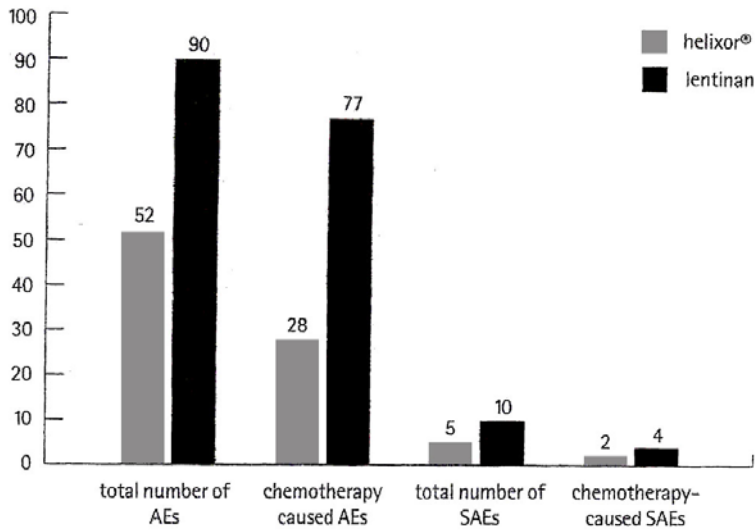
Numerous studies on mistletoe therapy have been conducted. Kienle and Kiene compiled the following summary in their analysis and evaluation of studies:

In the analysis up to January 2003, 23 prospective studies are found of which 16 are randomized (RCT), two quasi-randomized and five non-randomized (NRCT). 14 studies in total show a significant positive result in at least one clinically relevant parameter. In terms of the *overall survival rate,* nine studies show a statistically significant advantage, eight further studies had a positive tendency without statistical significance and four studies showed no effect.

In relation to *remissions,* one study showed a statistically significant positive result, two studies showed a positive tendency and three studies showed no effect. In terms of the *quality of life,* three studies showed a statistically significant advantage for mistletoe therapy and one study showed no effect. In terms of the quality of life and the *reduction of side effects* of cytoreductive therapies, four studies showed a statistically significant positive result.

A study by Beuth et al. showed that, in a five year follow-up, mistletoe therapy in breast cancer patients could improve the quality of life and sustainably reduce disease-or therapy-associated symptoms. In their review of 26 RCTs that was published in 2010, Kienle and Kiene reported an improvement in the quality of life in 22 RCTs. [148]

Reduction of side effects caused by chemotherapy (adverse [AE] and severe adverse effects [SAE]) through VA therapy [47]



The *methodological quality,* in particular of older studies, was heterogenous and was at times far below the modem standard. They often showed an advantage for mid stletoe therapy and, therefore, suggested a positive effect. However, during recent years, the quality has clearly improved so that we now have access to well-conducted studies.

The prospective, randomized studies predominantly show an advantage for mistle toe therapy in terms of survival rate, quality of life and reduction of the side effects of chemotherapy. The best evidence seems to exist for the *reduction of the side effects of chemotherapy* and for improvement of quality life [see fig.].

The Society of Anthroposophical Doctors in Germany (GAAD) has published the current status of mistletoe research in collaboration with the Medical Section of the School of Spiritual Science at the Goetheanum, Dornach, Switzerland.

3.5.16 Drug safety and side effects of mistletoe therapy

Mistletoe therapy is generally tolerated without problems. Even in longterm applications and high dosages it *does not show any toxic damage.* In animal experiments **on acute** subacute and chronic toxicity, mistletoe preparations in s.c. and i.v. applications **have** proven to be non-toxic. A hepato-, nephro,- and hematotoxicity in long-term **therapies** with high-dose mistletoe infusions could also be excluded in humans.

The *side effects* of mistletoe therapy consist mostly of the increase of the desired therapeutic 'main effects. The local reaction has already been mentioned. Allergic and pseudoallergic reactions are rare. Most intolerance reactions are not of an allergic origin, rather of a pseudoallergic origin. Thus, drug intolerances can often be avoided by dosis reduction or (in i.v. application) by a slower infusion rate. Itching at old injection sites and urticarial exanthema can occur; bronchial spasms, Quincke's oedema and hypotension rarely occur. Most of these reactions abate spontaneously and only rarely need symptomatic treatment (for drug safety, see also [151]).

3.6 Excursus: Perioperative therapy and supervision of anaesthesia

Surgery is still crucially important in oncology. Intervention in the connection between the ensouled-spiritual essence and the body via anaesthesia and intervention in the physical organization via surgery requires perioperative therapy and supervision of anaesthesia.

The Ego-organization and the astral organization cannot intervene in the etheric and physical organization during the period of anaesthesia. These changes that distinguish themselves from the physiological detachment during a healthy sleep are perceived by patients in different ways: some hardly notice a difference, others feel 'beside themselves' through to 'out of body experiences', in which patients see themselves lying in bed 'as if from the outside' and develop an awareness that is oriented towards the sun˙ound-ings. A changed body sensation through to paraesthesia is also reported, or a persistent drowsiness and anaesthesia-associated fatigue syndrome remain. The description of these dissociations can vary considerably. It is important to respond to these sensations and to support the affected person in the recovery of his or her constitutional autonomy.

For *restlessness* and *tension* as well as *anxiety the day before surgery*

- ***Bryophyllum 50%*** **(Weleda) powder 1-1-1 pinch**

are recommended.

For an *obese constitution*

- ***Bryophyllum D5/Conchae D7 aa*** **(Weleda) amp. s.c.up to several times daily**

- ***Bryophyllum D5/Conchae D7 aa*** **(Weleda) amp. 10 ml up to several times daily i.v. (where appropriate, also as drinking ampoule)**

are suitable.

In addition, there have been positive experiences with

- ***Aurum/Stibium/Hyoscyamus*** **(WALA) amp.as required**.

For the sudden occurrence of *panic* and *fear of death* without a verifiable reason and extremities that become cold:

- ***Aconitum napellus Rh D30*** **(Weleda) amp. s.c. as required.**

If an injection cannot be given

■ *Aconitum napellus D4, D6* (Weleda) dil. 15 drops dissolved in water

a *Aconitum Rh D4* (prescription preparation [e.g. Apotheke an der Weleda]) dil. 15 drops dissolved in water

can be used, even if the effect is slower.
For *precordial pains* accompanied *by fear:*

■ *Aurum/Lavandula comp.* (Weleda) ointment I VII 4.1.5 Pharmacotherapy, XXVI 4.3 Anxiety and fear] applied locally as ointment dressing around the heart region

Eurythmy therapy can stabilize female patients and help them to overcome, in particular, the symptoms of anxiety. A therapist can passively perform exercises for a patient when the patient is too weak or inactive as if paralysed by fear. Working with the feet and the hands has proven especially useful for dissolving anxiety. In some circumstances, premedication can be avoided because patients go into surgery calmer and with less vegetative symptoms. After an operation, eurythmy therapy supports the harmonious reintegration of the constituent elements into the whole constitution.

For compensation of the *dissociative effect of anaesthesia*

■ *Aurum metallicum praeparatum* (Weleda) amp. s.c. pre- or immediately postoperative

is recommended. This medication can also counteract the dull and *oppressive mood.*

The *awakening process* and the reintegration of the constituent elements after anaesthesia can be supported by

• *Aurum. D10 3 parts/Stibium D8 2 parts* (Weleda) amp. s.c. 1-0-0

a *Aurum D1O/Ferrum sidereum D.10 as* (Weleda) amp. s.c. 1-0-0

When *drowsiness* due to anaesthesia persists (postoperative fatigue)

• *Arnica Planta tots Rh. D6* (Weleda) amp. 1-0-0

a *Arnica e planta tota D6* (WALA) amp. 1-0-0

• *Hypericum ex herba D6 (WALA) amp.* s.c. 3 x daily over several days,

when there is persistent *tiredness, exhaustion* and *depression,* especially in a neurasthenic patient

■ *Meteoreisen Inject* (WALA) amp. s.c. 1-0-0

■ *Levico comp.* (WALA) amp. 1-0-0

■ *Levico comp.* (WALA) globuli velati 10-10-10

■ *Levico D1* (Weleda) dil. 20-20-20 drops

can be given.

In addition, for *arterial hypotension*

- *Skorodit Kreislauf Inject* (WALA) amp. s.c. 1-0-0

is recommended.

For *slow awakening* from *anaesthesia,* accompanied by *nausea* or *recurrent vomiting,* positive experiences with

- **a** *Arnica, Planta tota Rh D6* (Weleda) amp.
- ■ *Arnica e planta tota D6* (WALA) amp.

as required

together with

- ■ *Hypericum ex herby D6 (WALA) amp. s.c.* as required

have been reported for *vomiting* and *nausea* in an otherwise awake patient:

- ■ *Nux vomica e semince D6* (WALA) amp. s.c. as required

o r

- **a** *Anagallis ethanol. Infusum 0* (Weleda) mother tincture 5 drops in a sip of tea, repeat hourly.' [57]

For *reintegration* of the *constituent elements* that were dissociated by the surgical intervention

- **a** *Arnica Planta total Rh D3, D4* (Weleda) dil. 20-20-20 drops

is used. In the case of hypotension, the aspects that have been presented in [ix. 3. Treatment of arterial hypotension) apply.

Mistletoe therapy should already *start preoperatively* and *continue postoperatively.*

Surgery and anaesthesia are linked with a transient immune suppression. The basis of this, from a spiritual-scientific view, is the separation between the upper constituent elements and the physical and etheric organization. Improvement of the activity reduction of NK cells by Viscum album (as a one-off perioperative infusion therapy) could be demonstrated.

3.7 Eurythmy therapy and art therapies

Rudolf Steiner indicated a range of speech sounds for a 32-year-old female patient with right-sided breast cancer, who had been operated on and had received subsequent radiation. This range of speech sounds is often taken as the *basis of eurythmy therapy* in *cancer: 0-E-M-L-Ei/I-B-D.*

Tiredness as an experience of the so-called sense of life can develop through a too intense action of the nerve-sense system when there is an *excessive demand on consciousness,* but also when there is *exhausting activity* of the metabolism-movement system. The rhythmic system knows no tiredness. Tiredness occurs in restrictions of the etheric organization (e.g. excessive transformation of etheric forces into consciousness forces), but also in an insufficient anabolic action of the astral organization that carries formative qualities from sleep to the etheric action. The etheric organization is supported by *Argentum,* for example,

Argentit D4, D6 (Weleda) trit. (1)-(1)-1 pinch

Disturbances of concentration and attention after chemotherapy can develop due to a weakening of the etheric organization; its metamorphosed forces are the basis of thought processes. In this context, a silver compound, which contains the already mentioned Stibium as a natural silver-antimony compound, can be indicated:

Dyskrasit D6 (Weleda) trit. 1 pinch 1 x daily

It is obviously also important to be aware of the thyroid in a fatigue syndrome [XIII. Thyrology] Non - medication therapies such as *movement, eurythmy therapy* and *art therapies* effectively support this medication.

Cancer and sleep

Cancer patients often suffer from *sleep disorders.* Patients with metastasized breast cancer report the following: 24.7% have problems falling asleep, 44.3% problems remain-asleep and 29.9^0/0 have problems awakening. Frequently found are awakening reactions, superficial and unrestorative sleep accompanied by cancer fatigue, low autonomous regulation, reduced quality of life and increased anxiety.

While awake, the *astral body* devotes itself to external perception. The necessity to turn towards the Spiritual world that is the source of the images 'through which a person obtains his or her gestalt' is felt as tiredness. The astral body returns to its home during sleep and brings for itself, upon awakening, newly strengthened powers to life. The possession, which is conveyed by the astral body upon awakening, finds its expression in the refreshment that a healthy sleep bestows.'

In a healthy person, *tiredness* accompanies the *transition* of the *astral arganization* from the *day effect to the night effect,* while *refreshment* accompanies *its strengthened connection with the body in the morning.*

Tiredness and also insufficient refreshment (fatigue syndrome) are connected with restrictions of the rhythmically alternating day and night orientation of the astral organization. Hence, not only the level of the subjective state is touched, but also its formative

function that reaches through to the morphological findings of tumour differentiation and obtains prognostic significance (see above).

The use of medicines that have an effect on the awareness of patients, such as *analgesics* and *sedatives,* gains a new light in terms of these aspects. Is the astral organization kept from imprinting its formative power on the vitality forces by this medication? Are there possibly prognostic differences depending on the respective pain therapy? From this, only the demand for *increased attentiveness* with regard to these connections and, for individual analgesic therapy, oriented on what is necessary, including the approach of anthroposophical pain therapy, can be currently deduced.

Therapeutic procedures for *sleep disorders* are presented in [XVII. 4. Therapeutic approaches in sleep disorders].

4.9 Depression

Depression should be differentiated from fatigue syndrome. In the case of depressive symptoms with *inhibition of drive, loss of perspective* and *fears,* positive experiences have been reported with

Aurum D10/Ferrum sidereum D10 aa (Weleda) amp. s.c. (iv.)	1-0-0 daily to to 2 x weekly

(also for post-narcotic organic psychosyndromes).[242] Furthermore,

Hypericum Auro cultum Herba D2 (Weleda) dil.	20-20-20 drops

is helpful.

Depression cannot only develop due to a reduced action of the upper constituent elements in the metabolism-limb system H [XII. 4.2.3 Emotional phenomenology in the metabolic syndrome] but also due to weakness and exhaustion of the etheric organization. In this case,

Aurum/ Prunus (WALA) amp. s.c.	1-0-0

can be be used. *Liver therapy* supports the etheric organization and magnesium, which is closely related to light, can enlighten the darkness of the soul:

Hepar/ Magnesium D6 (Weleda) amp. s.c.	1 to several times weekly

Depression and also fatigue syndrome can be improved through *art therapies.* In this respect, art therapies and *eurythmy therapy* are used alongside medication therapy within an integrative therapeutic approach.

For restlessness and anxiety

• *Bryophyllum 50% (Weleda) powder*	1-1-1
• *Bryophyllum 5% (Weleda) amp. s.c.*	up to several times daily

are effective.