

The anthroposophic process approach towards medicinal products

Dr. Christiaan Mol (CM), Dr. Giancarlo Cimino (GC)

Summary

Anthroposophic medicinal products have been developed in cooperation between anthroposophic doctors and pharmacists upon request for patients. We would like to give an outline on how the anthroposophic doctor and the anthroposophic pharmacist work together in the understanding and developing of medicines.

The correlations between the human being in health and disease with “processes in nature”, such as plants on the one hand and pharmaceutical processing on the other hand are essential to conceive an anthroposophic medicine.

The correlations are explained and then practically applied to the pharmacy of substances from the Birch tree.

The dried leaves (HMPC) are used for diuretic action, the young and fresh leaves treated by a rhythmic process for arteriosclerosis. Birch wood gone through the heat process of carbonisation, Carbo betulae is to stimulate respiration. The composition, “Carbo betulae cum methano” is to focus the action of Carbo betulae upon the digestive tract in flatulence.

As far as quality is concerned besides GMP, GACP, Ph. Eur. Notes for Guidance special importance is given to the biodynamic cultivation of plants as well as an accurate definition of manufacturing methods.

The Anthroposophic Pharmaceutical Codex (<http://www.iaap.org.uk/downloads/codex.pdf>) describes quality as a whole.

Slide 1: Title: The anthroposophic process approach towards medicinal products

Dr. Christiaan Mol (CM)
Dr. Giancarlo Cimino (GC)

CM: Dear Ladies and Gentlemen, good morning. My name is Christiaan MOL, I am a pharmacist. I am a board member of the International Association of Anthroposophic Pharmacists. Within that organisation I am responsible for the Anthroposophic Pharmaceutical Codex, which describes anthroposophic pharmaceutical quality. I wish to thank you very much for the opportunity to speak today to you as members of this honourable committee. Please allow me to do this in the two languages that belong to my double nationality, in Dutch and in Greek. Geachte dames en heren, hartelijk bedankt voor de mogelijkheid vandaag hier over anthroposophische medicijn en pharmacie te mogen spreken; kalimèra axiòtimi iatrè kiria Chinoù, sas evcharistò parapoli ja tin evkerìa pou èchoume sìmera na exijìsome merikà vasikà thèmata eis tin anthropophikì iatrikì kai pharmakeftikì. I said: Dear ladies and gentlemen, dear Dr. Chinou, thank you very much for the occasion today to speak to you on basic issues of anthroposophic medicine and pharmacy.

As Dr. Zimmermann just explained, anthroposophic medicinal products have been developed in cooperation between anthroposophic doctors and pharmacists upon request; this is the reason why Dr. Cimino and myself decided to present our subject, that is “The anthroposophic process approach towards medicinal products” together. Please Dr. Cimino.

GC: Dear Ladies and Gentlemen, good morning, my name is Giancarlo CIMINO. I am an anthroposophic doctor, working as a general practitioner in Italy. I would like to greet you also in my native speech, so “Buongiorno, signore e signori, possa quest’incontro risultare fruttuoso per la reciproca comprensione ed un dialogo ininterrotto, in nome della salute dei cittadini europei.” I said: Good morning, ladies and gentlemen, may this meeting be fruitful and result in a reciprocal understanding and a continuous dialogue, in the name of the health of the European citizens.

Slide 2: Objectives

CM: Let me begin with the objectives of our presentation. We would like to give you an outline on how the anthroposophic doctor and the anthroposophic pharmacist work together in the understanding and developing of medicines.

During this process we will deal with the system approach to the functional level of human beings and of plants and the rationale of pharmaceutical transformation in anthroposophic pharmacy. It is not possible, due to our limited time, to avoid synoptic schemes. We take for granted the good will of our audience.

GC: As my colleague Dr. Mol said, anthroposophic medicines have been and are still developed upon request from doctors. First of all, I would like to clarify what this request is about more in detail. This requires an introduction about generally known subjects, and I apologize for recalling some elementar facts. Anyway, they will be considered from a point of view slightly different from the usual.

We approach this question of functional processes by looking for functional systems in the human being. Where do we find functional systems? The anthroposophic image of man will help us to recognize them.

Slide 3: Homeostasis

First let me recall that biochemical-biophysical changes are the hallmark of current scientific understanding of pathologic processes. Those changes express a disturbed homeostasis, that is, disequilibrium in human organism as source of pathology.

The homeostatic equilibrium involves the two polar functional systems present in the human being: the nervous system and the metabolic system.

In the nervous system oxygen consumption and catabolism prevail (cold pole, due to warmth dispersion).

In the metabolic system the reverse is true (warm pole, due to warmth production). The rhythmic blood supply linked to respiration through oxygen and CO₂ transport, contributes to maintaining their homeostatic equilibrium.

This way of emphasising system polarity in the living organism has an evolutionary and an embryological basis. This however would be a matter for a broader discussion.

CM: Dr. Cimino, given this polarisation, how can we interpret pathology?

GC: If the metabolic system is hyperactive, one has the so-called “warm diseases”, acute inflammatory pathologies.

If the nervous system prevails, one has rather destructive, chronic pathologies, such as cancer or systemic sclerosis.

All this is said only as a general orientation scheme.

Dear pharmacist, do you think, that you can help me develop and produce medicines from this approach?

CM: Dr. Cimino, yes I do, as I look at plants and pharmaceutical manufacturing in a similar way.

Slide 4: Substance formation

The plant as an organism is an original substance factory, producing organic substances from air's CO₂, water and light: photosynthesis. This central activity is carried out in the leaves. In fact that is the reason, for which the leaves are green, reflecting their content in chlorophyll. Substance synthesis can go different pathways: substances may be slowly condensed and accumulated on the one hand or rapidly transformed and/or dispersed on the other hand.

Slide 5: Correlation human being - plant

Looking at a perennial plant, substance condensation and accumulation mainly occur in the root (e.g. starch). I would call this gesture a cold one. Any solidification from a liquid matrix can be considered as a cold gesture. Moreover the plant roots in the “cold” and dark earth interacting with its minerals. On the other hand substance

dispersion and rapid transformation mainly occur in the flower pole: consider the evaporation of essential oils, e.g. the smell of thyme, that can be perceived distantly, the transience of petals and of the flower as a whole. This gesture can be called in polar opposition to the root gesture a warm one. Between the flower and the roots, i.e. in the middle, we have the lively process of original substance formation, which is based in the leaf, rhythmically developing from node to node.

An annual plant does not carry out neither substance accumulation nor lignification. If the process of substance condensation is enduring, then a tree results.

GC: So the approach to the functional level of the human organism has a correlation in the functions of plants.

CM: Exactly and also to pharmaceutical processing.

Slide 6: Correlation Human being - plant - pharmaceutical processes

In fact we can have “cold” processes, such as an aqueous maceration carried out at 4°C; warm processes, such as decoction and carbonisation; rhythmic processes such as rhythmic application of heat and cold and potentisation. We share the latter process with homeopathy.

GC: We hope to have given you a sort of basis at this point. Dr. Keller requested whether we could refer to plants worked on by the Herbal Medicinal Products Committee. We also found this a good idea and decided to work on the birch, *Betula*.

Dr. Mol can you adapt your approach to plants to the birch tree?

CM: I am happy to do so.

Slide 7: Betula

The birch, I mean both *Betula pendula* and *Betula pubescens*, is a tree of the more northern countries. It is a pioneer plant, also growing on poor soils, on the edge of moors, where light is abundant. We immediately recognise the birch from its white bark, reflecting the sunlight and its general bright appearance, with its light branches as well as its small and well formed leaves gently moving in the wind. All in all a beautiful appearance!

Let us first look at the formation of the leaves.

Slide 8: Birch leaf sequence

Here you can see the development of selected birch leaves of *Betula pendula*. The first pictures of the sequence reveal freshness and vividness. This feature goes together with a high substance turnover: they are full of glands, which sweat sticky lipophilic substances. These substances later dry and form a rather solid layer on top of the cuticle. The last leaves of the sequence show ageing features such as yellow edges quite early. There seems to be a high metabolic rate followed by an early ageing and drying.

Slide 9: Birch tree in August

If we look at the trees in summer, we can see on this picture, how this vividness can no longer be perceived. On the contrary, the trees seem tired and weary.

Slide 10: Birch bark

In addition to the green leaf there is another place of particular substance formation: the phellogen, producing cork cells in which after some years the chemically almost pure substance betulin, a triterpene, is accumulated. This substance is responsible for the white color and makes up more than 20% of the white cork. It may be interesting to note, that the discoverer of betulin, the chemist Lowitz in 1788 described betulin as “a modified resin in the form of a salt”. With the finger betulin can be removed as a white dust. The white cork of the birch tree is highly resistant, reflecting a particular inertia. Betulin after sublimation shows a needle structure.

Both substance formations in the leaves and in the bark occur with a comparable dynamics: very lively at the start with a tendency to deposit.

Dr. Cimino, does the birch tree offer any therapeutically relevant features, which you may want in a medicine?

GC: I am a physician and have an expert eye or, if you prefer, a professional deformation, as I am too often looking for diseases. I even look at plants as a human disease process.

CM: Please clarify this Dr. Cimino.

GC: Indeed as an anthroposophic doctor I look at non - human living organisms as if they were diseased humans. The one sidedness of the processes in the non-human living organisms is a bridge to conceive the diseased person. We look for substances that result from distinct processes in nature and later in the pharmaceutical lab. We begin looking for process homologies in nature*. The concerned substances are to stimulate the organism to heal itself.

As in phytotherapy, also in anthroposophic medicine the birch tree has a relation to the kidney.

CM: Dr. Cimino, why?

Slide 11: Birch process/ Kidney process

GC: We can observe parallelism between plants and human diseased organs not only through an organotropism of a plant's effect on them, but also looking at the gesture the plant makes in its biology. The kidney separates the urine flow toward the urinary tract from the reuptake of glucose, salts and amino acids. This process occurs in permanent balance, I mean balance of solubility in particular. The birch however tends to deposit substances from very lively substance formation processes. If man is unable to keep substances in solution, i.e. if we find accumulation of protein end products and minerals in the tissues, as a sort of inner excretion, we are dealing with a pathological process.

Slide 12: HMPC Betula

CM: The monograph of the Herbal Medicinal Products Committee deals with leaves of *Betula pendula* and *Betula pubescens*. As far as I know the Committee has involved a new peer review procedure for this monograph. The herbal substance is the whole or fragmented dried leaves; the preparations are the powdered dried leaves or a dry extract with water. The dried leaves are taken as an infusion with water.

GC: The quick passage from juvenile to mature leaf can be seen as the consequence of rapidly evaporating water. The administration of a preparation derived from the dried leaves stimulates watery diuresis. The traditional indication is to “increase the amount of urine to achieve flushing of the urinary tract”. This indication is as meaningful from the anthroposophic perspective.

CM: So you are fine as far as this indication is concerned to use medicinal products as referred to in the monograph of the committee?

GC: Yes I am.

Slide 13: Fresh and young birch leaves

At the same time I would like to address the juvenile and high metabolic rate of the young and fresh leaves to the general metabolism of patients with sclerotic diseases of the rhythmic system, e.g. arteriosclerosis.
Can you help me Dr. Mol?

CM: So your need is to transfer the juvenile processes of the young leaves to the patient by a coherent pharmaceutical process?

GC: Exactly.

Slide 15: “Ferm” procedure

CM: I advice to harvest the young leaves of *Betula pendula* in the first half of May. This stage reflects the passage from juvenile leaf to maturity. I suggest to make an aqueous extract applying heat and cold. This means the application of heat at 37°C to the finely chopped fresh leaves, to which purified water has been added. The mixture is heated for seven days, interrupted by cooling phases at 4°C. 37°C is the temperature of the healthy human being and 4 °C is the temperature at which water is most dense. These two temperatures reflect the human thermic state on the one hand and the most physical, or heavy state of water on the other hand. This rhythmic process relates to the leaf processes and causes a lactic acid fermentation carried out by the naturally present microbial flora. Around the third day the pH value sinks to circa pH 4. Lactic acid is a “double faced” metabolite, as it can go both pathways: catabolism and anabolism. I believe this process reflects the level you wish to address.

Are you content with this?

GC: Yes thank you very much. I understand the pharmaceutical process you have described as a way to give in the hands of the physician a preparation with the quality of the fresh leaves leading towards the functionally mature leaves. However I still see another disease in *Betula* and in patients which I want to address.

Slide 15 Kidney respiratory process

As you can see, the kidneys exert a typical respiratory function, i.e. the regulation of blood pH. I believe that the birch must be able to provide a drug for those situations in man, when the patients suffer from an “insufficient oxidation”.

I would like to address respiratory problems, such as respiratory failure. Perhaps the pharmaceutical process can find a way to produce a respiration-sustaining or a respiration stimulant for chronic bronchitis or subclinical asthma...

Slide 16: Carbonisation/ insufficient oxidation

CM: “Insufficient oxidation”, as you say, may lead us to a proper rationale for this purpose. Imperfect oxidation is carbonisation, that is heating in absence of oxygen. The trunk of the birch tree that shows a high sap pressure before springtime manifesting the strong forces of liquid circulation on the one hand and with its phellogen (and phelloderm) and cambium tissues high vitality on the other hand. The process of carbonisation is opposed to the features of vitality: only the carbon structure remains as a trace of the original substance formation induced by light. Therefore I propose that birch wood undergo carbonisation. The anoxic substance resulting should be likely to stimulate respiration.

CG: In fact chronic bronchitis patients, so called “blue bloaters” can benefit from the treatment with *Carbo betulae*.

CM: Carbonised birch wood, *Carbo betulae*, is also used in homeopathic pharmacy. Its manufacture is described in the German Homoeopathic Pharmacopoeia. So I propose that you use the appropriate homeopathic preparations.

GC: Thank you for this hint. Dear ladies and gentlemen, as you see both preparations typically used in phytotherapy (dried birch leaves) on the one hand and in homeopathy (*Carbo betulae*) on the other hand are used in anthroposophic medicine.

Dr. Mol, I still have another need.

Can you strengthen the action of *Carbo betulae*, commonly used for flatulence in the digestive tract? In the digestive tract of sick people, also volatile substances may be formed, either with nitrogen rings or methane itself.**

Slide 17: Carbonisation plus methane impregnation

CM: To further similarity to the human pathological process, *Carbo betulae* could be brought together with a typical bacterial catabolite. I propose to use methane, as you mentioned, a product from anaerobic catabolism.

I propose to impregnate *Carbo betulae* with methane. Carbonisation leaves a carbon scaffolding inclined to adsorb gases. This scaffolding is then impregnated by a

carbon metabolite once again created in a process under exclusion of oxygen, bacterial anaerobiosis. The composition called “Carbo betulae cum methano” can be considered as a double anoxic carbon substance (Carbo betulae has been “mineralised” and CH₄ has been “aerified”).

It is a typical feature of anthroposophic pharmacy to bring different substances together by distinct processes, creating “compositions”.

GC: Thank you. That is an interestingly composed substance.

At this point we have to touch the quality standards of anthroposophic medicines.

Dr. Mol, I would like that the medicines I need are at a high and appropriate quality level of the pharmaceutical standards, taking into account specific features, such as the anthroposophic approach to agriculture. Can you say something about this?

CM: Dr. Cimino thank you for this question. In fact I would like to mention to this honourable committee something about pharmaceutical standards. In fact as a pharmacist I owe transparency and quality to the society I am acting in.

Slide 18: Pharmaceutical standards

First of all I would like to refer to GMP, GACP (good agricultural and collecting practises), Notes for Guidance on the quality of herbal drugs and preparations, the European Pharmacopoeia and other official pharmacopoeias as basic standards for pharmaceutical quality.

In addition sourcing of plants from biodynamic, or at least organic cultivation are used in preference.

As mentioned earlier, anthroposophic pharmacy assigns special importance to pharmaceutical processes. The processes need to be well defined. Today the European Pharmacopoeia, the German Homoeopathic Pharmacopoeia, the Pharmacopée Française and the British Homoeopathic Pharmacopoeia describe a number of manufacturing procedures used in anthroposophic pharmacy. The remaining are well defined in the Anthroposophic Pharmaceutical Codex.

The anthroposophic pharmaceutical codex describes anthroposophic pharmaceutical manufacturing and quality control. It can be downloaded from the IAAP website (<http://www.iaap.org.uk/downloads/codex.pdf>).

Slide 19: Picture of Jan Steen

GC: Concluding we wish to summarise what this cooperation between the doctor and the pharmacist is about

Study of processes in the human being in health and disease
Study of processes in nature and related substances

CM: Pharmaceutical processing stimulating the self healing forces of the patient.

Slide 20: Thank you for your attention.

Note*: This is a particular branch of biology as extended through the principles of anthroposophy. For more information see e.g <http://www.louisbolk.org/>.

Note**: From an anthroposophic point of view the process of the kidney is related to the metabolism of gases in general, such as CO₂, O₂, N₂, thus involving also other organs.

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