Dear Colleague,

After twenty five years in collaboration with Professor Gian Carlo Montruccoli, committee member of F.I.G.O. (International Federation of Gynaecology and Obstetrics) and member of the expert panel of S.I.S. (International Society of Senology), we have developed a new technique for the diagnosis of breast cancer named Dynamic Angiothermography (DATG).

Since 1975, DATG has been applied widely on over 7000 patients, with over 1200 biopsies performed from the resulting diagnosis. The results obtained from the technique have been published in scientific journals and have been the central subject of international conferences attended by the major experts in the field of senology. In addition, DATG is an integral part of the university textbooks adopted by the departments of senology within the major Italian universities including “La Sapienza” of Rome.

DATG is classified within the category of contact thermography, certified as such by the International Scientific Community (International Classification of Disease ver. 2002).

DATG was originated and developed in collaboration with the Department of Medical Physics, University of Bologna. These studies led to the development of a new plate which is different from that used in traditional contact thermography. In this case, the new device is able to give more precise information by not only identifying the quantity of heat emitted by the breast, but actually photographs the microcirculation present in the mammary gland with a resolution of very few microns. This “morphological photograph”, in the absence of any pathology, remains constant during the life of a woman.

Scientific studies on neoangiogenes gives evidence of the presence of new blood vessels from the very early stages of breast cancer. Therefore during the clinical follow up with the patient, subsequent changes in the optical profile versus that obtained in the initial visit would indicate a transformation towards a cancerous state.

It is suggested that DATG be used alongside current diagnostic techniques such as mammography, ecography and magnetic resonance, in particular with young women and for the lobular histology.

In summary, the characteristics of DATG are:

• Every woman has her own angiothermographic pattern equivalent to a unique “fingerprint”.
• In the absence of any disease this picture remains constant throughout the life of the woman.
• Any changes in the picture are a potential signal of the start of a disease. The likelihood of a disease or its malignancy is independent of the size or form of the lesion
• Other advantages of the technique are the rapidity of its application, cost-effectiveness and non-invasive nature.

The breakthrough of this unique technology is the basis of its foundation, prevention and early diagnosis.

With best regards

[Signature]

Dr. Daniele Montruccoli

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Description of the Dynamic Angiothermography (DATG) Technology

The core of Dynamic Angiothermography (DATG) is a plate featuring a very thin fine taut layer of a special plastic (18 x 24 cm diameter) incorporating liquid crystals based on molecular nanotechnology. The molecular structure of the crystals enables them to refract ambient light in the red-to-violet spectrum depending on the heat detected by the plastic film when placed on the breast. The image this generates on the plate shows up as lines, a few millimeters in diameter, that represent key characteristics of the underlying blood flow. The proper interpretation of these signs results in the diagnosis. Dynamic Angiothermography, which is altogether different from any other thermographic technique, i.e. it does not measure heat but provides qualitative rather than quantitative data, has so far been tested on about seven thousand patients. Backed up by more than one thousand biopsies, these tests show that DATG can not only diagnose cancer but also localize pre-invasive lesions in the breast, thereby making it possible to prevent their developing into cancer.

Practical Considerations

- Rapid
- Economical (limited equipment and maintenance costs)
- Completely non invasive
- Can be used at any age
- Very good compliance
- Breast cancer prevention (even detection of lobular neoplasia)
- No radiation, No chemical, No pain
- Repetitive and Reproducible
- Rapid performance time, immediate response

Software easy to use
Dynamic Angiothermography (DATG)

Description of the Technology

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The new formed vessels increase with the progression of the disease.

Clinical Case No.1

- This new flowlines (12-15 cm. long) feed such very small
  feed a lobular in situ carcinoma (1 mm. in diameter)
- 15 months later one remains the same and the other disappears

The Three Fundamental Characteristics of DATG are

- Pathological modifications are independent of tumor size and shape
- Each woman has her own strictly personal flowline pattern (like fingerprint)
- Mod. AURA

Available for physicians only after training course.

Investigation of the breast with DATG Technology
The Three Fundamental Characteristics of DATG are

- Each woman has her own strictly personal flowline pattern (like fingerprint)
- This pattern remains constant over decades in the absence of patho-physiological changes
- Pathological modifications are independent of tumor size and shape

Clinical Case No.1
DATG pattern remains the same over 25 years (in absence of pathology)

1° Visit : Normal 14.03.1978 2° Visit : Normal 27.11.2003

Clinical Case No.2
DATG pattern changes in presence of pathology


- The two flow-lines (white arrow) of the external mammary are initially normal
- 15 months later one remains the same and the other disappears to form a new line with the acromial (red arrow). Both go on to feed a lobular in situ carcinoma (1 mm. in diameter)
- This new flowlines (12-15 cm. long) feed such very small tumor.

Cancer

Cancer : Left Breast

Right breast  Left breast

Cancer : Right Breast

Right breast  Left breast
Progression of Angiogenesis from normal to cancer

The new formed vessels increase with the progression of the disease. The international scientific literature confirms the key role of new blood vessel formation (angiogenesis) in the onset of invasive breast neoplasm. Dynamic Angiothermography can detect the functional blood flows due to angiogenesis.

Semeiotic

Scheme of vascular anatomy of left breast
As vessels enter the breast, they get smaller and smaller as they ramify

Normal flowlines: external mammary
Normal angiothermographics flowlines reproduce the anatomy of the circulation of the breast

Suspicious flowlines
Upper internal quadrant of the left breast showing a marked anomalous flow line formed by countless vessels activated by a Lobular and Ductal Carcinoma in situ with intraductal diffusion.

Cutaneous projection of the breast’s main arteries.
When we put the DATG plate on the breast, it reveals normal vessels as endpointed, because they are ramifying and their signature flowlines reach a vanishing point.

Normal flowlines: acromial
The flow-lines of each plexus should be centripetal, fade out as they terminate in their own area and be proportional to the contralateral.
Breast Cancer

Breast cancer is one of the major causes of death among women in the world. Although there are a few areas of lower incidence, this disease displays an almost universal range, with a post-diagnosis mortality rate of 20-25% within the first five years and 35% within ten. Even for women who do survive its effects are lasting, for it alters their psychology as well as their emotional and social lives forever. In all these manifold aspects, therefore, treating and assisting people with breast cancer requires a lengthy and particularly solid commitment by families and communities. Indeed, despite the serious nature of breast cancer, there is still no way of effectively combating it in terms of diminishing its incidence. In other words, while the notable expenditure of resources both human and financial undertaken by a number of scientific and community organizations may have resulted in lowering the mortality rate, although even this claim is much debated by experts, it has not lowered the number of women affected by the disease. But this is not possible for the breast even today, with so-called prevention being reduced to early diagnosis. While early diagnosis is surely very useful in saving lives, though not in all cases, it is not enough to prevent the disease. This brings us to the latter reason our poor understanding of the very first signs of breast carcinogenesis, an issue as new as it is important. Its high profile is due to recent advances in molecular biology, especially in genetics and proteomics. Until now one of the basic tenets in senology was that cancer proceeds from cellular alterations that are initially slight but progressively advance to outright neoplasia. The truth is rather that lesions which are histologically important may never turn into cancer while less histologically important ones may do so. In actual fact, it is the presence or absence of certain genes that determines this progression. It thus follows that it is necessary to localize a pre-invasive lesion and study its carcinogenetic potential via a detailed understanding of its genetic profile. Indeed, otherwise it will be impossible to make proper decisions about treatment and prophylaxis that would lead to real prevention. The bottom line is that new diagnostic and treatment strategies are needed. One of these appears to be the observation in vivo of changes in the breast as blood-flow. We know that variations in blood flow are determined by all the physiological and pathological phenomena that continually occur in a living organism or in any part of it. It is only logical that a signal event like the onset of a cancer must involve blood flow in the affected area, which in the case of cancer means commandeering more blood from the nearest vessels. The tumour needs to be nourished. Indeed, it begins to redirect blood flow towards itself even before it arises. It is the cells that will turn into the tumour that cause these circulatory alterations.

Last Referencials


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