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DRUGS AND DERMOPIGMENTATION: COLLATERAL EFFECTS OF DRUGS IN RELATION WITH DERMOPIGMENTATION TREATMENTS

To do a dermopigmentation treatment safely we need several competences to safeguard the customer's health and the treatment operator's professionalism. Luckily, much is being done to check the quality of the pigment, but complications can often occur for unpredictable events or scarcely evaluated procedures. Among them there are the side effects of drugs on the skin and their role in the patient's healing.
With the informed consent the patient says what drugs he/she is taking, thus permitting the treatment operator to do the dermopigmentation with the most suitable timing and methods, and with the support of the medical specialist required by each particular case.
The reasons why we are doing this research are:
- the connection between the pharmacological awareness of the collateral effects of drugs on the skin and the visualisation of their interference with dermopigmentation both during the procedure and the following phases.
- an in-depth research through scientific publications already existing in medical-scientific literature.

COMMON DRUGS

ANTI-INFLAMMATORY NSAIDs
acetylsalicylic acid, naproxen, ketoprofen, ibuprofen etc.

ANTICOAGULANTS
heparin, warfarin, acenocoumarol etc.

Among their side effects there is an important increase in the bleeding time and a reduction of platelet adhesiveness.
The effects that have been observed on the dermopigmentation treatment are mainly these:
- Excessive bleeding can determine a scarce introduction and retention of pigments in the skin with unsatisfactory treatment results.
- Delayed and difficult wound healing.

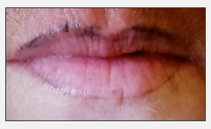
Great attention must be paid to avoid contamination with gauzes and needles, and the treatment must be done in sterile field.
What to do?
Recommend that the customer does not take NSAIDs before the treatment (during the 4 days preceding it)
As anticoagulants cannot stop being taken, we recommend that dermopigmentation treatment is done only if authorised by the doctor.
Give the customer a rigorous self-treatment protocol and recommend that he/she follows it.

TYROID MEDICATION
Levothyroxine, Liothyronine, etc.
The main side effect is a reduced wound healing in patients with hypothyroidism.
Do not treat the eyes of customers suffering from hypothyroidism when there is exophtalmos (bulging eye) because there can be the following situations: puffy eyelids, problems with intraocular pressure, lacrimation, inflammation, dry eye. Any
eyelid wound can be considered like a "wide open door" for foreign bodies which could cause thrombosis of the cavernous sinus as a consequence of infective processes.

IMMUNOSUPPRESSIVE DRUGS
Methotrexate, Immunoglobulins, Adrenal cortical steroids, Cyclosporin
Immunosuppressive drugs are used to control serious allergic reactions, autoimmune diseases and transplant-related diseases.
As we can easily guess from their name, these are drugs that can **suppress the customer's immune system**.
The main side effect on the dermopigmentation treatment is a serious healing delay.

ANTIBIOTICS
What we can definitely assert is that people who are taking antibiotics should never undergo dermopigmentation treatment because they have an active infection.

ALENDRONATE (bisphosphonates)
They are used to treat postmenopausal osteoporosis, to reduce the risk of vertebral fractures, and with patients who are being treated for cancer, in particular if there are bone metastases.
In a customer treated with alendronate there were unusual, quick changes in the tattoo ink injected in the lips. There were changes both in the colour and the aspect, for example a pigment migration similar to the one that occurs after laser tattoo removal .



Main effects on the dermopigmentation treatment
In the picture we can see the treatment result after 7-10 days.
We can notice the nearly total loss of the pigment and the sudden colour change, from the original red to a bluish/blackish colour. The treatment operator repeated the dermopigmentation and there was the same effect after a few days. This is due to the removal of metal ions (iron oxides) chelating action, caused by the molecular structure of bisphosphonates (in the past, these drugs were used as corrosion inhibitors).

PSYCHOACTIVE SUBSTANCES

COCAINE/LEVAMISOLE
Main effects on the dermopigmentation treatment
In patients who are using psychoactive substances like cocaine there is an elevated risk of infection because of the absence of immune defences caused by Levamisole (originally used only to treat parasitic worm infections in animals, it is now also used to cut cocaine). Used with cocaine, it prolongs its effects, behaving like the molecules of the hallucinogen.
Besides, it is very dangerous because the blood vessels become inflamed and break, causing necrotic lesions on the skin.
An article published in the Journal of the American Academy of Dermatology made it known that at least 70% of the cocaine now circulating in the United States could be contaminated with Levamisole. Also 50% of the specimens analysed in Italy have shown the same contamination.

SMOKERS AND NICOTINE
Among the main effects on the dermopigmentation treatment, the most visible one is that smokers tend to bleed a little more compared to non smokers during the treatment.
Bleeding during or immediately after the treatment can cause a reduction of the pigment injected.
When treating lips, there can be a loss of pigment in all the treated area, or only in the lips area where the smoker holds the cigarette filter. Cigarette filters are highly absorbing.

ALCOHOL
Alcohol can inhibit platelet aggregation.
Alcohol consumption can interfere with the normal blood coagulation of occasional drinkers 24-48 hours after drinking, and for longer periods in case of regular drinkers.
For this reason, customers/patients who are regular drinkers, or those who drink alcohol in the 48 hours before or after the treatment, can bleed more than usual.
As we know, bleeding during or immediately after the treatment can cause a reduction of the pigment injected.

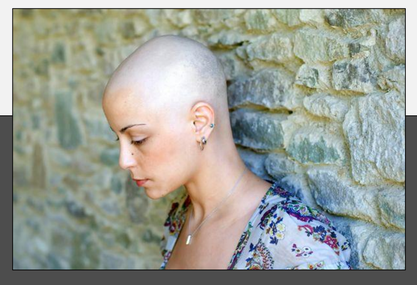
ANAESTHETICS

Medical reports underline that topical anaesthetics made of Lidocaine and Prilocaine , which are highly alkaline, are strongly advised against and dangerous if used near the eye.*

*Eaglstein NF. Chemical injury to the eye from EMLA cream during erbium laser resurfacing. Dermatol Surg. 1999 Jul;25(7):590-1. PubMed PMID: 10469121.

Alkalining the skin before injecting tattoo pigments increases the risk of pigment migration, particularly with the Carbon Black pigment.
The presence of Prilocaine (PH9) determines alkalining and the resulting increase in the dispersion of carbon pigment.

There are many dermopigmentation treatments that can be done to oncological patients:
Reconstruction of the areola and nipple area
Eyebrows, eyeliner
Scar camouflage
Trichological dermopigmentation



ONCOLOGICAL DRUGS

CHEMOTHERAPEUTIC DRUGS
Among the side effects generated by these drugs the main one is an IMPAIRED BONE MARROW FUNCTION and a consequent lowering of the blood counts – low counts of white blood cells - with a high risk of infection due to a reduced immunity to disease.
The treatment must be done only when allowed by the oncologist, scheduling it during the period when the blood cell counts are adequate.
A tattoo infection could nullify the medical treatment and delay the following chemotherapy session.

HORMONAL THERAPY
The therapy starts after the treatment and it is important to remember that it will last for five years.
Effects on dermopigmentation treatment:
The wound healing is slow because the skin is dry, dehydrated, thin and sensitive and there could also be cutaneous vasculitis (inflammation of the blood-vessel walls).
Young women affected by breast cancer undergoing hormonal therapy can increase the risk of having brittle bones at a young age. For this reason, hormonal therapy is associated with a therapy for osteoporosis. As already seen, specific attention must be paid when the customer is undergoing a therapy with bisphosphonates as they have a negative effect on the lips dermopigmentation.

BIOLOGICAL TREATMENT
Effects on dermopigmentation treatment:
These drugs reduce immunity to disease, thus increasing the risk of infection.
The wound healing is slow because there is a higher risk of bleeding and of changes in the healing process.
There is also a high risk of skin photosensitivity and the skin is unable to be protected against ultra-violet radiation.
In the areas exposed to light, skin reactions are more intense and aggressive.

RADIOTHERAPY
The treatment has to be done very carefully and delicately because the skin treated with radiotherapy is hyper-pigmented, sensitive, fibrous, scarcely elastic and scarcely vascularized.
The skin feels hard and scarcely vascularized.
Treatment times and procedures must be respected rigorously.

CLINICAL CASE
Complications from septicaemia caused by dermopigmentation treatment for the reconstruction of the areola and nipple area in a patient treated with radiotherapy.
The infective process was caused by a total lack of competences and by the absence of an adequate protocol.
No request and no anamnesis from the medical specialist
No informed consent: with no consent there is no tracking of the pigments and materials used.
No protection device (white coat, mask, sterile field)
No self treatment protocol given to the patient
Although the patient informed the operator about the bad healing, the second treatment session was made too early on a skin treated with radiotherapy, and at the same time as hormonal therapy.

CONCLUSIONS
HOW TO TREAT AN ONCOLOGICAL PATIENT

- DOCTOR'S CONSENT to the dermopigmentation treatment
- Compilation of the INFORMED CONSENT to which you must attach a document tracking the sterile material used.
- The dermopigmentation treatment must be done in STERILE FIELD.
- Assessment of the assumed medications and PRODUCE A RIGOROUS SELF TREATMENT PROTOCOL.

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