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Dissertation Proposal Topic: Tranexamic Acid in Melasma Treatment

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Background and Introduction: A common pigmented condition, melasma, is best defined as localized, chronic-acquired hypermelanosis of skin. The condition is found to be refractory to treatment, with a tendency to recur after treatment phases (Del Rosario E, Florez-Pollack S, Zapata Jr. L, Hernandez K, Tovar-Garza A, Rodrigues M, Hynan LS, Pandya AG, 2017).

Tranexamic Acid, which is a hemostatic drug, has in the past been successfully used in treating hypopigmented effects. Further, low-grade melasma patient profiles have demonstrated sufficient results when Tranexamic acid has been administered. Its use has been validated in two conditions - on melasma lesion, and blocking UV-induced pigmentation.

It was successful in high UV exposures, pregnant women, women in use of sex hormones, birth control pills, increased UV effects and so on. Objective: This dissertation proposal seeks to offer therapeutic, medical and cure-aiding benefits of the use of Tranexamic acid (TXA) as an innovative agent, either as an oral, topical or intralesional method for monitoring, control, and treatment of melasma. Importance of this Proposal:

Tranexamic Acid was originally used as hemostatic agent. Its use in treating and gaining clinical benefits in the treatment of Melasma is not highly documented and there is scope for establishing and validating Tranexamic acid with accurate, medically focused perspectives. Hypothesis: H1:

Alternative hypothesis: There have been medically documented and

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validated evidence that smaller doses use of Tranexamic Acid (250 mg BD) has the beneficial and remedial action against the spread of Melasma (Poojary & Minni, 2015).

HO: Null Hypothesis: There is no medical evidence to even remotely suggest that smaller doses use of Tranexamic Acid (250 mg BD) has a beneficial and remedial action against the spread of Melasma. Methodology: This Proposal uses the qualitative method of research, to achieve the quantum of literature, findings, and studies to ascertain research question, as the first step. The literature used is secondary sources such as trial proceedings of peers and data from published papers on the effect of TXA treatment on Melasma. All of the referenced publications will be no older than 10 years and will not have a low rating. In the next step, the author will infer from the research and use the new-found knowledge to address the use of Tranexamic acid. Methods: The first phase of the research will investigate literature on the chosen topic to establish the effects of administering Tranexamic acid in Melasma treatment. At the outset, it is important to understand Melasma as a disorder and explore the reasons for its occurrence.

Melasma is a pigmentation disorder and is common among women of Hispanic and Asian groups. The pathogens for this condition are yet to be established, and the course of treatment continues to be a challenge. Traditionally, this condition is treated using agents for skin-lightening. However, the successes have varied. When patients are refractory then topical therapy is used. Intense pulsed light, even laser interventions are also used as an alternative treatment method. Additionally, the success rates

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of all these procedures are considered paradoxical darkening and low, apart from their recognizable side-effect.

Journal paper by Budamakuntla L., et al., titled “ A Randomized, Open-label, Comparative Study of Tranexamic Acid Microinjections’ and Tranexamic Acid with MicroneedG27 ling in Patients with Melasma”, Cho, Choi, Cho and Lee titled “ Role of oral tranexamic acid in melasma patients treated with IPL and low fluence QS ND: Yag laser. Na Ji, et al., titled” Effect of tranexamic acid on melasma- a clinical trial with Histological evaluation” and Ebrahim Naeini study called “ Topical tranexamic acid as a promising treatment for melasma”.

G28 G29 Anju George (2015) review article in Journal Pigment International, established that Tranexamic Acid is an effective depigmenting agent as it is a synthetic derivative of lysine amino acid and useful in arresting the conversion of plasminogen into plasmin (inhibiting plasminogen activator). The result is the lower production of arachidonic acid and thereby lowering prostaglandin levels. Thus, TXA becomes responsible for lowered melanocyte tyrosinase activity and therefore, useful in treating melasma or UV-induced hyperpigmentation. Del Rosario E, Florez- Pollack S, Zapata Jr. L, Hernandez K, Tovar-Garza A, Rodrigues M, Hynan LS, Pandya AG’s (2017), “ Randomized, placebo-controlled, double-blind study of oral tranexamic acid in 2 the treatment of moderate to severe melasma” treated 250mg of TA/placebo capsules (2 times a day, for three months) to 44 patients. 39completed the study and the primary outcomes were the Modified Melasma Area and the Severity Index (mMASI) score showing 49% lower

mMASI in TA group and 18% in the control group. Severe melasma showed higher rates of improvement G30 over moderate melasma.

Further, after treatment stopped for three months, there was 26% reduction in mMASI in the TA Group, over the baseline results. Additionally, they witnessed 19% reduction in the placebo arm and reported no adverse events in both the groups. Hence, this study established that oral TXA was effective and superior to placebo in patients who had moderate to severe melasma, and thus ideal alternative to standard therapies. The limitations of this group were: G31 the study was conducted at a single center where patient demography was predominantly Hispanic women. G32 G33 G34 Other studies which tested the efficacy of oral TXA vs Triple combination for melasma treatment ( Neerja Puri, 2015) and concluded that recurring melasma is satisfactorily treated with oral TXA in comparison to the combination of other modalities.

Expected OutcomesThe therapeutic, medical and cure-aiding benefits of G35 the use of Tranexamic acid (TXA), as an innovative agent, either as an oral, topical or intralesional method for monitoring, control, and treatment of melasma. Gnat ChartJanuary- February: Proposal writing create a list of potential studies to review. February-March: Initial review of primary resources with best results on use of TXA for melasmaMarch- April: Establish outline by cross-references and secondary data from journal articles, studiesJune - July: Propose the best way to arrive at proposal objective July - August: Submit ThesisRecommendation: From the research studies listed above and literature review, it can be said TXA as a liposomal can be used safely in its topical format. Some of the studies imply that it can be used to <https://assignbuster.com/dissertation-qualitative-method-of-research-to-achieve/>

lighten melasma and is recommended as a low-dose oral TXA as a safe and useful alternative to treating refractory melasma.

Conclusion: Across the nearly 30 journal articles, books, review articles on the therapeutic effects of TXA on melasma, the conclusion that can be drawn is as follows: The Acid in its liposomal form factor is highly useful in arresting melasma and will continue for a period of 3 months after the treatment has stopped. Thus, as a low-dose TXA is effective in the treatment of refractory melasma. G36 The research objective is achieved by this study as the therapeutic effect is evaluated for oral TXA administration to abate melasma refractory.

Moreover, in conjunction with other related studies in the use of TXA for melasma, it is revealed that there TXA is effective in aiding moderate conditions at a faster rate than average or sub-normal melasma conditions, in the controlled groups that were tested. Limitations of study: The research includes the study of two different demographics - Hispanic and Asians. Therefore, the results of the studies vary in terms of moderate or high rates of success, is subjective to the population where the study was conducted.

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