Original Article

Efficacy of Oral Tranexamic Acid in the Treatment of Melsama

Treatment of Melsama

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ABSTRACT

Objective: To determine the efficacy of oral tranexamic acid (TXA) in the treatment of melasma.
Study Design: Descriptive study.
Place and Duration of Study: This study was conducted at the Outpatient Department (OPD) of Medicine and Dermatology, Nishtar Hospital Multan from March 2016 to March 2017.
Materials and Methods: One hundred and ninety patients were selected. Patient's basic data and demography was noted. Patients with acquired hyper-pigmentation on the face tan to brown macules or patches located symmetrically with initial MASI score > 10 were included in this cross-sectional study. Melasma assessment severity index (MASI) score was calculated for each patient at the start of treatment. Patients were treated with oral Tranexamic acid 250 mg given twice daily for a period of six weeks. After 6 weeks of treatment with oral TXA, MASI score was again calculated for each patient. Difference between two MASI scores (i.e MASI score reduction) and percentage of reduction in MASI score of each patient was calculated. Data analysis was computer based with the use of SPSS version 16.
Results: A total of 190 women were included in this study, all patients had MASI score more than 10 before start of treatment. Mean age of our study cases was 34.43 ± 9.23 years with minimum age was 26 years and maximum age was 60 years. Menopausal status was positive in only 18 (9.5%) of our study cases. Mean pretreatment MASI score 39.60 ± 8.04, with minimum MASI score was 25 and maximum was 47. Mean post treatment MASI score was 5.35 ± 2.56 with minimum MASI score was 2 while maximum was 9. Our study results have indicated that there was significant reduction of MASI score in terms of pretreatment MASI score and post treatment MASI score (p=0.000). Excellent response was seen in 68(35.8%) of our study cases while 122 (64.2%) had good response with oral tranexamic acid.
Conclusion: Oral use of Tranexamic acid is efficacious, safe and effective treatment for the melasma patients without any serious side effect. Oral administration of Tranexamic acid provides rapid and sustained clinical improvement in the treatment of melasma. The results of our study support use of Oral Tranexamic acid among targeted population which had significant impact on the improvement of quality of life of these patients and relieved them from psychological stress of this disease. Further studies on this subject are needed.
Key Words: Melasma, Tranexamic acid, efficacy.

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INTRODUCTION

Melasma is referred as acquired hypermelanosis of body parts that are exposed to the sun[1-3]. Characteristic presentation of melasma involves symmetrically arranged hyperpigmented macules that may be punctate and/or confluent[4]. Forehead, chin, cheeks and upper lip are commonly affected locations and it may occur occasionally on other sun-exposed body areas [5].

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However pathophysiology of melasma still remains unclear. In most of the cases, hormonal activity in females appears to have direct relationship with melasma as it is commonly observed during pregnancy and use of oral contraceptive drugs[6]. Other underlying factors involved in etio-pathogenesis of the disease include; medication with photosensitizing agents, thyroid dysfunction, Ovarian dysfunction and different kinds of cosmetics[7]. Sunlight exposure has been reported to be important factor in developing melasma and all wavelengths of the sunlight can induce melasma. All potential treatments seem to fail without strict avoidance of exposure to sunlight, making it difficult to treat. Pigmentation as well as resolution of melasma is gradual. Recurrence and resistant cases are often reported if avoidance of sunlight is not heeded. Till date none of its existing treatment modalities have yielded desired outcomes in terms of quick and sustained recovery. Topical hydroquinone is recognized

as gold standard for topical treatment of melasma[8]. Existing plethora of remedies include prevention of UV radiation exposure, chemical peeling, topical bleaching agents and light based treatment therapies. Laser based treatment modalities include such as; Q – switched Alexandrite laser, fraxel laser, Er-YAG laser, pulsed carbon dioxide laser and intense pulsed light (IPL) laser treatment [9].Addition of Tranexamic Acid (TXA)is a novel concept in treating patients of melasma which was earlier employed as an-antifibrinolytic agent. Tranexamic Acid is currentlyused for inhibition of plasminogen-keratinocyte interactions which decreases tyrosinaseenzyme activity. This leads to decrease in melanin synthesis from the melanocytes. Various drug trials have reported the efficacy of TXA showing total improvement rates to be 95.9% [10] in the treatment of melasma.

Proper management of melasma helps improve productivity of the patients as it hits main working force of the society, hence plays important role in the national productivity and health economy. So we conducted this study to document efficacy of tranexamic acid in treatment of female patients having melasma.

MATERIALS AND METHODS

One hundred and ninety patients from Nishtar Hospital Multan outpatient department (OPD) of Medicine and Dermatology were selected. Patient's basic data and demography were noted. Patients with acquired hyper-pigmentation on the face, tan to brown macules or patches located symmetrically with initial MASI score > 10 were included in this cross-sectional study. Patients having thrombosis, blood coagulation disorder, psychological disorders or showing expectation for the treatment, already taking treatments for melasma within 6 months and lactating mothers/pregnant ladies were excluded from our study. All patients were subjected to the following diagnostic work-up: physical examination and all baseline investigationsi.e blood complete picture, liver function tests, renal function tests and clotting profile. MASI score was calculated for each patient at the start of treatment. Patients were treated with oral Tranexamic acid 250 mg given twice daily for a period of six weeks. After 6 weeks of treatment with oral TXA, MASI score was again calculated for each patient. Difference between two MASI scores (i.e MASI score reduction) and percentage of reduction in MASI score of each patient was calculated. Efficacy was measured in terms of excellent improvement at 6 weeks of therapy with oral tranexamic acid 250 mg given twice daily, on the basis of Melasma Assessment Severity Index (MASI). The criteria for improvement was: Excellent: includes patients in whom percentage of reduction in MASI score was greater than 90%, Good: if reduction was 60-90%, fair: if reduction was 30-59% and poor if reduction was less than 30%. Data analysis was computer based with the use of SPSS version 16.

RESULTS

Mean age of our study cases was 34.43 ± 9.23 years (range; 26 – 60 years) and 152 (80%) were in the range of 20-40 years of age. Menopausal status was positive in only 18 (9.5%) of our study cases. Mean pretreatment MASI score 39.60 ± 8.04, minimum MASI score was 25 and maximum was 47. Our study results have indicated that majority of our study cases i.e. 138 (72.6%) had pre-treatment MASI score in the range of 31-48. Mean post treatment MASI score was 5.35 ± 2.56, minimum MASI score was 2 while maximum was 9. All patients had MASI score more than 10 before start of treatment. Our study results have indicated that there was significant reduction of MASI score in terms of pretreatment MASI score and post treatment MASI score (p=0.000).

Table No. 1: Stratification of efficacy with regards to age. (n=190)

Age groups (In Years)	**Efficacy**		**P-value**
	Yes (n=68)	**No** (n=122)	
20 – 40 **(n=152)**	56	96	**0.792**
41 – 60 **(n=38)**	12	26	
Total	**190**		

Table No.2: Stratification of efficacy with regards to menopause status. (n=190)

Menopause status	**Efficacy**		**P-value**
	Yes (n=68)	**No** (n=122)	
Yes **(n=18)**	12	06	**0.065**
No **(n=172)**	56	116	
Total	**190**		

Table No. 3: Stratification of efficacy with regards to Pretreatment MASI score. (n=190)

MASI Score	Efficacy		P-value
	Yes (n=68)	**No** (n=122)	
11 – 30 **(n=52)**	12	40	**0.151**
31 – 48 **(n=138)**	56	82	
Total	**190**		

Table No. 4: Distribution of pretreatment MASI score with efficacy. (n=190)

Efficacy	Pretreatment MASI score		P-value
	Mean	**Standard deviation**	
Yes **(n=68)**	38.39	7.92	**0.05**
No **(n=122)**	41.76	7.92	

Table No. 5: Distribution of post treatment MASI score with efficacy. (n=190)

Efficacy	Post treatment MASI score		P-value
	Mean	**Standard deviation**	
Yes **(n=68)**	3.12	1.00	
No **(n=122)**	6.59	2.31	**0.000**

Excellent response was seen in 68 (35.8%) of our study cases while 122 (64.2%) had post treatment MASI score less than 90% reduction with oral tranexamic acid. Of these 122 study cases, 103 (55.8 %) had good response with oral tranexamic acid while 8.4 % had fair post treatment response.

DISCUSSION

Melasma is associated with high impact on aesthetic appearance, causes psychosocial and emotional distress. Its implications have significant impact on the quality of life& personality of patients in reducing their productivity and physical activity[11,12]. Additionally there are extra medical expenses of treatment which usually do not yield expectations of patients. As melasma affects mainly face which is easily visible distresses patients in their daily life routine, motivating patients to consult healthcare professionals[13-14]. Proper management of melasma helps improve productivity of the patients as it hits main working force of the society, hence plays important role in the national productivity and health economy.

So this study was conducted to document the efficacy of oral Tranexamic acid in the treatment of melasma in females. A total of 190 women meeting inclusion and exclusion criteria of this study were included in this study. All patients had MASI score more than 10 before start of treatment. Mean age of our study cases was 34.43 ± 9.23 years (range; 26 – 60 years) and 152 (80%) were in the range of 20-40 years of age. Ali et al [15] from Lahore reported similar mean of patients in which majority of them were young with melasma i.e. 29.90 ± 7.18 years. Their findings are close to our study findings. Similar results have been reported by Halder et al[16].

Studies have shown considerable reduction in prevalence of melasmaafter 50 years of age[17]. Menopausal status was positive in only 18 (9.5%) of our study cases. Hexsel et al[18] from Brazil reported 14.2% women were menopausal having melasma. These findings are close to that of our study results. Mean pretreatment MASI score 39.60 ± 8.04, with minimum MASI score was 25 and maximum was 47. Our study results have indicated that majority of our study cases i.e. 138 (72.6%) had pre-treatment MASI score in the range of 31-48. Mean post treatment MASI score was 5.35 ± 2.56 with minimum MASI score was 2 while maximum was 9. Our study results have indicated that there was significant reduction of MASI score in terms of pretreatment MASI score and post treatment MASI score (p=0.000). Karn et al[9] also reported statistically significant reduction of score with oral tranexamic acid in patients with melasma. Cho et al[19] also reported significant reduction of MASI score with oral tranexamic acid treatment.

In our study, Excellent response was seen in 68 (35.8%) of our study cases while 106 (55.8 %) had good response with oral tranexamic acid while 8.4 % had fair post treatment response. Different studies [4, 5, 17-20] have documented efficacy of oral tranexamic acid in the treatment of melasma in different parts of the world. It was found to be effective, safe, cost effective with minimal side effects for the treatment of melasma. A study conducted by Wu et al [10] reported 54 % good response with oral tranxeamic acid which is close to our study results.

CONCLUSION

Oral use of Tranexamic acid is efficacious, safe and effective treatment for the melasma patients without any serious side effect. Oral administration of Tranexamic acid provides rapid and sustained clinical improvement in the treatment of melasma. The results of this study support use of Oral Tranexamic acid among targeted population which had significant impact on the improvement of quality of life of these patients and relieved them from psychological stress of this disease.

Author's Contribution:

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Revisiting Critically:	Ghoza Chaudhery & Sherish Javed
Final Approval of version:	Sehrish Javed

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Caesarean Sections

Caesarean Sections at Mardan Medical Complex: a One Year Review

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ABSTRACT

Objective: To review the caesarean sections performed at Gynae A unit at Mardan Medical Complex, KPK, Pakistan, over a period of one year.

Study Design: Retrospective study.

Place and Duration of Study: This study was conducted at the Mardan Medical Complex (MMC) during the study period from 1st January 2014 to 31st December 2014.

Materials and Methods: The records of 630 patients who underwent caesarean section were analysed.

Results: During the study period, there were 5409 deliveries and 630 caesarean section sections, thus giving a caesarean section rate (CSR) of 11.6%. 84.5% were emergency caesarean sections, and 15.4% were elective caesarean sections. The rate of primary caesarean sections was 79.5% and repeat caesarean sections was 20.4%. The most common indication was fetal distress and repeat caesarean section.

Conclusion: A trial of vaginal birth after caesarean section in appropriate cases and use of cardiotocography for continuous fetal heart monitoring in labour, with confirmation of suspected fetal distress through fetal blood acid-base studies are recommended. A prospective study may reveal some of the other reasons for the increase CSR.

Key Words: primary caesarean section, repeat caesarean section, fetal distress

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INTRODUCTION

The caesarean section is now the most commonly performed major operation around the world and the first surgical procedure performed independently by residents/trainees in obstetrics-gynaecology.[1] It is one of the oldest obstetric operations in the world with over a third of women in many developed countries undergoing caesarean section when they give birth.[2] Its rates have been rising worldwide over the past few decades. The World Health Organization has identified an ideal caesarean section rate (CSR) for a nation of around 10-15%. [3,4] This is based on studies that show improving maternal and neonatal morbidity and mortality as rates rise up to this level, but minimal improvements or even negative health outcomes as the rate increases past 10%. [5,6]

The purpose of this study was to know the overall CSR to analyze the different indications for primary and repeat caesarean sections.

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MATERIALS AND METHODS

A retrospective study was conducted at the Department of Obstetrics and Gynaecology Unit A Mardan Medical Complex, KPK, from January 1st 2014 – December 31st 2014. It is a tertiary care hospital where the majority of cases used to be referred from the periphery. All the patients admitted through emergency and out-patient department who had undergone caesarean section were included in the study. Patients' demographic status, socioeconomic status, age, parity, indication and type of caesarean section and neonatal outcomes were noted down. The study was approved by the hospital ethical committee, and a statistical analysis of the results was carried out on the latest version of SPSS.

RESULTS

Table No. 1: Distribution of deliveries during one year. (n=5409)

Type of Delivery	No. of patients	Percentage
Vaginal delivery	4409	81.51%
Vacuum extraction	241	4.45%
Forceps delivery	79	1.45%
Emergency C/S	533	9.85%
Elective C/S	97	1.79%

During the study period, the total deliveries within the hospital's Gynae A Unit were 5409, out of which 630 were through caesarean section thus, giving a CSR of