iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 **Issue:** XI **Month of publication:** November 2021

DOI:

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue XI Nov 2021- Available at www.ijraset.com

A Clinical Study of *Aaragwadh Pratisāraṇīya Madhyama Kṣāra* and *Dhatrikhadir kwath* in the Management of *Shvitra* w.s.r to Vitiligo

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Abstract: ***Shvitra is a disease that causes white patchy discoloration of the skin in one or more parts of the body. Shvitra (Vitiligo) is a disease that poses a significant challenge to the medical community. People of all ages are affected by this condition. Shvitra is mentioned alongside other types of Kushtha, the difference between Shvitra and Kushtha are that the Shvitra has non-secretary in nature and the peculiarities of Nidana , Asadhya-Lakshana, and the chronicity of the disease. Every Tridosha is vitiated for Shvitra's development. Shvitra is listed in Ayurveda as Raktaja Vikara. According to modern medicine, Vitiligo is a patchy loss of melanin pigment from the skin. In epidermis melanin pigment is present and causes the unique colour of skin. The shortage of the melanin pigment locally or in the body's complete skin causes skin whitening. According to Acharya Sushruta, Pratisaraniya Kshara is indicated in Shvitra. Ksāra Karma therapy is the minimal invasive parasurgical procedure. In Bhaisajya Ratnavali, Dhatrikhadir Kwatha mentioned in Kushtha rog chikitsa for the treatment of Shvitra. In this study 30 patients were selected randomly, were divided into two Groups 15 patients in each group, Group A (Treated with Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma) and Group B (Treated with Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma therapy and Dhatrikhadir kwath). The results show that Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma therapy and Dhatrikhadir kwath When the results of Group A and Group B are compared, it is clear that Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma therapy and Dhatrikhadir kwath is better than Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma in the treatment of Shvitra.***

Keywords: Shvitra, Vitiligo, Aaragwadh Pratisāraṇīya Madhyama KṣāraKarma, Dhatrikhadir kwath.

I. INTRODUCTION

According to Ayurveda *Shvitra* is a disease that causes white patchy discoloration of the skin in one or more parts of the body. The difference between *Shvitra* and *Kushtha* are that the *Shvitra* has non-secretary in nature[1] and the peculiarities of *Nidana, Asadhya-Lakshana*, and the chronicity of the disease. Every *Tridosha* is vitiated for *Shvitra*'s development. *Shvitra* is listed in Ayurveda as *Raktaja Vikara*. Due to the comparable signs and symptoms, *Shvitra* can be linked to Vitiligo. Despite the fact that *Shvitra* does not cause pain, ulcers, or any other bodily discomfort, it does cause an inferiority complex. Individual mental illness causes major disruptions in the affected person's social, personal, and educational lives.

Ayurveda can find a safe, easier, less complicated, cost-effective, and fruitful approach to disease. Though the disease is incurable even after one year[1] of onset, repeated use of herbomineral medicines of ayurveda and *Ahara-Vihara* modifications may able to provide the *Shvitra* patient a satisfactory relief.

The skin is an essential and large organ that almost covers the whole external surface of the body. It creates a safeguard against pathogens and environmental harm.The skin is made up of two layers, i.e. epidermis and dermis. The outer protective layer is known as epidermis. Melanocytes are present in epidermis, Melanocytes are melanin producing cells. Melanin is the pigment that causes normal skin color .When melanocytes lost the ability to synthesize the pigment; the skin loses its color. Vitiligo is acquired and idiopathic.

According to modern medicine, Vitiligo is a patchy loss of melanin pigment from the skin. In epidermis melanin pigment is present and causes the unique colour of skin. The shortage of the melanin pigment locally or in the body's complete skin causes skin whitening. Vitiligo affects 1 percent of the world's population[2]. Vitiligo is shown to be prevalent in India at 0.5-2.5 percent, with a high prevalance of 8.8 percent in Gujarat and Rajasthan[3].

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Shvitra (Vitiligo) is a disease that poses a significant challenge to the medical community. People of all ages are affected by this condition. Despite the fact that the disease has been known to all for a long time, there is no satisfactory therapy regimen for its management in modern medical science. There is a pressing need to find a safe and efficient treatment for Vitiligo, and Ayurveda is always a ray of hope in this regard. In present trail the selected drugs are *"Aaragwadh pratisāranīya madhyama kshāra"* and *"Dhatrikhadir kwath"*.

According to *Acharya Sushruta, Pratisaraniya Kshara* is indicated in *Kilasa*(vitiligo).[3] *Kshāra Karma* therapy is the minimal invasive parasurgical procedure. This procedure has many advantages like- easy, safe, effective and known for having few or no complications, requiring less time in the hospital, and causing less disruption to the patient's normal routine.

In *Bhaisajya Ratnavali, Dhatrikhadir Kwath* mentioned in *Kushtha rog chikitsa* for the treatment of *Shvitra*[4]. *Dhatri* fruit is having *Sheeta virya, Tridoshahara* and *Rasayana* properties. *Khadir* is having *Shita virya, Kapha-Pitta Shamaka* and *kushthaghana* properties and according to *Bhavaprakasha, khadir* is *Shvitra-hara*. To assess the importance of these properties the clinical study was disbursed.

The study was carried out in 30 clinically diagnosed patients having signs and symptoms of Vitiligo and fulfilling the inclusion criteria. The patients were equally and randomly divided into 2 groups with 15 patients in each group. *Aaragwadh Pratisāraṇīya Madhyama KṣhāraKarma* therapy was given in group "A" and in group "B" *Aaragwadh Pratisāraṇīya Madhyama KṣhāraKarma therapy* and *Dhatrikhadir kwath* was given.

II. AIMS AND OBJECTIVES

1) To study etio-pathogenesis of *Shvitra* (Vitiligo)
2) To evaluate the efficacy of *Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* and *Dhatrikhadir kwath*in the management of Vitiligo.

III. MATERIALS AND METHODS

Following materials and methods were used for the present clinical study –

A. *Selection of Cases*

The study was conducted on 30 clinically diagnosed patients of *Shvitra* (vitiligo) selected from OPD of M.M.M. Govt. Ayurved College Campus Hospital, Ambamata, Udaipur and Moti Chohatta Govt. Ayurved Hospital, Hathi Pole, Udaipur.The study was explained clearly to the subjects and their signed written informed consent was taken before starting the trial.

B. *Inclusion Criteria*

1) *Kṣhārakarma yogya* as per *Ayurveda* texts.
2) Patient diagnosed as *Shvitra (*vitiligo) on the basis of clinical features mentioned in *Ayurveda* texts.
3) Patients in the age group of 18 to 60 years of either sex.
4) Patients who are not suffering from any systemic disorders.
5) Patient should be capable of obeying *pathya apathya.*
6) Patients who will be ready to give written informed consent.
7) Patient with history of *Shvitra* (vitiligo) less than or equal to five years.

C. *Exclusion Criteria*

1) Patient of age below 18 and above 60 years will be excluded.
2) *Ayogya* for *Kṣhārakarma* as per *ayurveda* texts
3) Patients with depigmentation caused by chemicals, burns, or another disease.
4) Patient with Depigmented Hairs, Hypo pigmented Lips and Chronic Ulcer, Depigmented Patches in genital area and Congenital Vitiligo will be excluded from the study.
5) Patients with other systemic illness like uncontrolled Diabetes mellitus with complication, Hypertension, malignancy and albinism.
6) Pregnant and lactating females.
7) White anesthetic spots, which are characteristic of leprosy.
8) Vitiligo patches complicated with eczema.
9) Patient participated in any clinical trial within last six months.

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D. Lab Investigation

1) CBC
2) ESR
3) BT & CT
4) RBS
5) FBS & PPBS
6) HIV Test (as per required)
7) HBsAg (as per required)

E. Study Design

30 patients were selected and randomly divided in to two groups

1) Allocation: Randomized.
2) No. of Groups: Two
3) Primary Purpose: Treatment

F. Administration of Drug

30 clinically diagnosed patients of *Shvitra* (Vitiligo) were divided randomly in two groups. 15 patients were included in every group.

Table no. 1

Group	Group-A	Group-B
Procedure	*Kṣhārakarma*	*Kṣhārakarma*
Drugs	*Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* for *Kṣhārakarma*	*Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* for *Kṣhārakarma* and *Dhatrikhadir Kwath* orally
Application	*Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* applied on affected area	*Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* applied on affected area
Dose	3 sittings of *KṣhāraKarma* at the interval of 7 days	3 sittings of *KṣhāraKarma* at the interval of 7 days and *Dhatrikhadir kwath* (2 doses of 20 ml each) with *Madhu* for 21 days.
Duration	21 days	21 days

1) Time Frame: 5 weeks.
2) Trial Period: 3 weeks.
3) Follow-up: 2 weeks after completion of treatment.

IV. CRITERIA FOR ASSESSMENT

All registered patients for the clinical trial were looked for each change or any improvement in the following sign and symptoms of *Shvitra* (Vitiligo) during and after the course of therapy. The severities of the symptoms were assessed before treatment (B.T.), during treatment (D.T.) and after treatment (A.T.) for the statistical significance according to the following symptom rating scale. The patient's response was assessed using criteria by assigning the required score to each parameter. The scoring system used was as follows –

A. Rookshata (Dryness)

Table no. 2

Score	Explanation
0	No line on scrubbing with nail
1	Faint line on scrubbing with nail
2	Clear and marked line on scrubbing with nail
3	Severe *rookshata* leading to itching

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B. Daah (Burning Sensation)

Table no. 3

Score	Explanation
0	No burning sensation
1	Ocassional burning sensation
2	Tolerable regular burning sensation
3	Intolerable regular burning sensation

C. Romaparidhwanshi (Hair fall)

Table no. 4

Score	Explanation
0	Hair fall absent
1	Few hair loss
2	Fair hair loss
3	Complete hair loss

D. Romavarna (Colour of Hair)

Table no. 5

Score	Explanation
0	Normal
1	Few part of hair Red coloured(*Raktaromta*)
2	Fair part of hair Red coloured(*Raktaromta*)
3	Hair completely Red coloured(*Raktaromta*)

E. Kandu (Itching)

Table no. 6

Score	Explanation
0	Absent
1	Mild/ Occasional
2	Moderate/ Tolerable Infrequent
3	Severe/ Frequently

F. Colour of Skin

Table no. 7

Score	Explanation
0	Normal Skin colour
1	Red colour
2	White to reddish
3	Red to whitish
4	White

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G. Area of Patches

Table no. 8

Score	Explanation
0	0 - 2 cm^2
1	2.1 - 4 cm^2
2	4.1 – 6 cm^2
3	> 6cm^2

H. Number of Patches

Table no. 9

Score	Explanation
0	Nil
1	1-3
2	4-6
3	More than 7

V. RESULTS

For within the group statistical results, the Nonparametric data Wilcoxon matched–pairs signed rank test was used for the various variables. For between the group statistical results the Mann-Whitney test was used.

A. Individual Analysis (Within The Group)

1) Variable Wise Analysis In Group-A

Table no. 10 Effect of treatment on variables of Group – A
(Wilcoxon matched –pairs signed rank test)
N=15

Variables	Mean		Diff. In Mean	% Relief	S.D.	S.E.	W	p value	Re.
	B.T.	A.T.							
Rookshata (Dryness)	2.40	0.80	1.60	66.67	0.5071	0.1309	120	<0.001	E.S.
Daah (Burning sensation)	2.26	0.86	1.40	61.94	0.5071	0.1309	120	<0.0001	E.S.
Romaparidhwanshi (Hair fall)	2.33	2.06	0.27	11.58	0.4577	0.1182	10	0.125	N.S.
Romavarna (Colour of hair)	2.33	2.06	0.27	11.58	0.4577	0.1182	10	0.125	N.S.
Kandu (Itching)	2.46	0.93	1.53	62.19	0.5164	0.1333	120	<0.0001	E.S.
Colour of skin	3.20	2.73	0.47	14.68	0.5164	0.1333	28	0.0156	S.
Area of Patches	1.40	1.07	0.33	23.57	0.4880	0.1260	15	0.0625	N.S.
No. of patches	2.73	2.67	0.06	2.19	0.2582	0.0667	1	>0.9999	N.S.

(B.T.- Before Treatment, A.T.- After Treatment, Diff.- Difference, S.D.- StandardDeviation,S.E.- StandardError,Re.- Remark,E.S.- ExtremelySignificance, N.S.- Not Significance, W = Wilcoxon signed rank,, N - No. of pairs)

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2) Variable Wise Analysis In Group-B

Table no. 11 Effect of treatment on variables of Group – B
(Wilcoxon matched –pairs signed rank test)
N=15

Variables	Mean		Diff. In Mean	% Relief	S.D.	S.E.	W	p value	Re.
	B.T.	A.T.							
Rookshata (Dryness)	2.53	0.80	1.73	68.37	0.4577	0.1182	120	<0.0001	E.S
Daah (Burning sensation)	2.33	0.80	1.53	65.66	0.6399	0.1652	105	<0.0001	E.S
Romaparidhwanshi (Hair fall)	2.13	1.86	0.27	12.67	0.4577	0.1182	10	0.1250	N.S
Romavarna (Colour of hair)	2.33	2.0	0.33	14.16	0.4880	0.1260	15	0.0625	N.S
Kandu (Itching)	2.46	0.73	1.73	70.32	0.4577	0.1182	120	<0.0001	E.S
Colour of skin	3.33	2.80	0.53	15.91	0.5164	0.1333	36	<0.0078	V.S.
Area of Patches	1.26	0.86	0.40	31.74	0.5071	0.1309	31	<0.05	S.
No. of patches	2.66	2.60	0.06	2.25	0.2582	0.0667	1	>0.9999	N.S

B. Percentage Of Difference After Treatment

Table No. 12 showing percentage difference of individual variable in both groups

S.No.	Variables	% Diff. in Group-A	% Diff. in Group-B
1	*Rookshata*(Dryness)	66.67	68.37
2	*Daah*(Burning sensation)	61.94	65.66
3	*Romaparidhwanshi*(Hair fall)	11.58	12.67
4	*Romavarna*(Colour of hair)	11.58	14.16
5	*Kandu*(Itching)	62.19	70.32
6	Colour of skin	14.68	15.91
7	Area of Patches	23.57	31.74
8	No. of patches	2.19	2.25
Average % of relief		30.99	34.50

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C. Internal Comparision (Between The Group)

Table No. 13 Intergroup comparison of various variables of both groups
(Mann-Whitney Test)

Variables	Mean		Diff.	% Relief	U	p value	Re.
	GroupA	GroupB					
Rookshata (Dryness)	1.60	1.73	-0.13	-8.12	97.50	0.4616	N.S.
Daah (Burning sensation)	1.40	1.53	-0.13	-9.28	94.50	0.4094	N.S.
Romaparidhwanshi (Hair fall)	0.26	0.26	0	0	112.50	0.9784	N.S.
Romavarna (Colour of hair)	0.26	0.33	-0.07	-26.92	120	0.7347	N.S.
Kandu (Itching)	1.53	1.73	-0.2	-13.07	90	0.2746	N.S.
Colour of skin	0.46	0.53	-0.07	-15.21	105	0.7376	N.S.
Area of Patches	0.33	0.40	-0.07	-21.21	105	0.7281	N.S.
No. of patches	0.06	0.06	0	0	112.50	0.9617	N.S.

U = Mann-Whitney

D. Overall Assessment Of Treatment

Table No. 14 Overall assessment of effect of the treatment on the registered patients of *Shvitra* (Vitiligo) of both the groups –

Result	Group-A		Group-B		Total	
	No. of patients	Percentage	No. of patients	Percentage	No. of patients	Percentage
Cured: 100% improvement	0	0.00	0	0.00	0	0.00
Marked Improvement: >76-99%	0	0.00	0	0.00	0	0.00
Moderate Improvement: >51-75%	0	0.00	1	6.66	1	3.33
Mild improvement: >26-50%	13	86.66	12	80	25	83.33
Unchanged: < 25%	2	13.33	2	13.33	4	13.33
Total	15	100	15	100	30	100

1) *Group-A:* In the group-A 13 patients (86.66%) were shown mild improvement and 2 patients (13.33%) were remain unchanged.
2) *Group-B:* In the group-B 12 patients (80%) were shown mild improvement, 01 patient (6.66%) was shown moderate improvement and 2 patients (13.33%) were remain unchanged.

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ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue XI Nov 2021- Available at www.ijraset.com

VI. DISCUSSION

A. *Discussion on the Results Obtained*

Effect of treatment -

1) *Rookshata (Dryness):* In Group A 66.67% relief is observed in *Rookshata* (Dryness), which is extremely significant ($p<0.001$). While, in Group B 68.37% relief is observed in *Rookshata* (Dryness), which is extremely significant ($p<0.0001$). On comparison between two groups the results are not significant. ($p = 0.4616$).
2) *Daah(Burning sensation):* In Group A 61.94% relief is observed in *Daah* (Burning sensation), which is extremely significant ($p<0.0001$). While, in Group B 65.66% relief is observed in *Daah* (Burning sensation), which is extremely significant ($p<0.0001$). On comparison between two groups the results are not significant. ($p = 0.4094$
3) *Romaparidhwanshi(Hair fall):* In Group A 11.58% relief is observed in *Romaparidhwanshi* (Hair fall,) which is not significant ($p = 0.125$). While, in Group B 12.67% relief is observed in *Romaparidhwanshi* (Hair fall), which is not significant ($p = 0.1250$). On comparison between two groups the results are not significant. ($p = 0.9784$)
4) *Romavarna(Colour of hair):* In Group A 11.58% relief is observed in *Romavarna* (Colour of hair), which is not significant ($p = 0.125$). While, in Group 14.16% relief is observed in *Romavarna* (Colour of hair), which is not significant ($p = 0.0625$). On comparison between two groups the results are not significant. ($p = 0.7347$)
5) *Kandu(Itching):* In Group 62.19% relief is observed in *Kandu* (Itching), which is extremely significant ($p<0.0001$). While, in Group B 70.32% relief is observed in *Kandu* (Itching), which is extremely significant ($p < 0.0001$). On comparison between two groups the results are not significant. ($p = 0.2746$)
6) *Colour of Skin:* In Group A 14.68% relief is observed in Colour of skin, which is significant ($p = 0.0156$). While, in Group B 15.91% relief is observed in Colour of skin,which is very significant ($p < 0.0078$). On comparison between two groups the results are not significant. ($p = 0.7376$)
7) *Area of Patches:* In Group A 23.57% relief is observed in Area of patches,which is not significant ($p=0.0625$). While, in Group B 31.74% relief is observed in Area of patches, which is significant ($p < 0.05$). On comparison between two groups the results are not significant. ($p = 0.7281$)
8) *No. of Patches:* In Group A 2.19% relief is observed in No. of patches,which is not significant ($p>0.999$). While, in Group B 2.25% relief is observed in No. of patches,which is not significant ($p > 0.999$). On comparison between two groups the results are not significant. ($p = 0.9617$).

VII. CONCLUSION

Shvitra is a well-known disease from *Vedic* era, although the complete description was found in *Ayurvedic samithas. Shvitra* is characterized by patchy white discoloration of the skin. The sickness not only affects the skin, but it also involves the vitiation of *Rakta Dhatu*, along with the involvement (*Dushti)* of *Rasa, Mamsa,* and *Meda Dhatu.* The signs and symptoms of the *Shvitra* indicate that *Shvitra* and Vitiligo are similar disease entities.

1) Although *Shvitra* can appear on any region of the body, patches are more obvious in sun-exposed areas and around body openings such as the mouth and umbilicus.
2) Chronicity is important in the prognosis of *Shvitra.*
3) *Viruddha Ahara* and *Mithya Ahara,* such as milk with salt, milk with sour foods, excessive fermented food consumption, and meal consumption during indigestion were seen in the majority of *Shvitra* patients in this clinical study.
4) Patients with *Vata-Pittaja Prakriti* and *Pitta-Kaphaja Prakriti* are most likely to suffer from *Shvitra* (Vitiligo). *Shvitra* is a *Tridoshaja Vyadhi* but the dominance of *Pitta* is seen in *Shvitra.*
5) It is noticed that the stressful lifestyle affects *Mansika Nidana,* such as *Chinta, Shoka, Bhaya, Krodha* etc. which contribute to *Agni* and *Dosha* vitiation. The persons with stressful lifestyle are considerably more vulnerable to *Shvitra.*
6) After a thorough analysis of 30 *Shvitra* (Vitiligo) patients, who were divided into two groups based on the method of intervention, the results were easily compared between the twogroups.
7) There is no satisfactory therapy regimen for the management of *Shvitra*(Vitiligo) in modern medical science. Corticosteroids and PUVA therapy are the primary lines of treatment for Vitiligo, but they are usually ineffective and can cause significant adverse effects in patients. . In the study the selected drugs were "*Aaragwadh pratisāranīya madhyama kshāra"* and "*Dhatrikhadir kwath*". According to *Acharya Sushruta* and *Acharya Vagbhatta, Pratisāranīya kshāra* is indicated in *Shvitra* and *Dhatrikhadir Kwatha* mentioned for the treatment of *Shvitra* in *Bhaisajya Ratnavali*.

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8) Group-A was treated with *KṣhāraKarma* by *Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* and Group-B was treated with *KṣhāraKarma* by *Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* and *Dhatrikhadir kwath* orally.

9) Overall relief of 30.99% was observed in Group-A.

10) Overall relief of 34.50% was observed in Group-B.

11) According to this study, Group-B shows better result than Group-A. The *Kṣhāra Karma* by *Aaragwadh Pratisāraṇīya Madhyama Kṣhāra* and *Dhatrikhadir kwath* both are more effective than only *Kṣhāra Karma* by Aaragwadh*Pratisāraṇīya Madhyama Kṣhāra* in *Shvitra*.

12) The patients in both the groups have responded well to treatment, but on comparison of the both the groups the data is statistically notsignificant.

13) Patients in both groups reported no negative side effects from any intervention.

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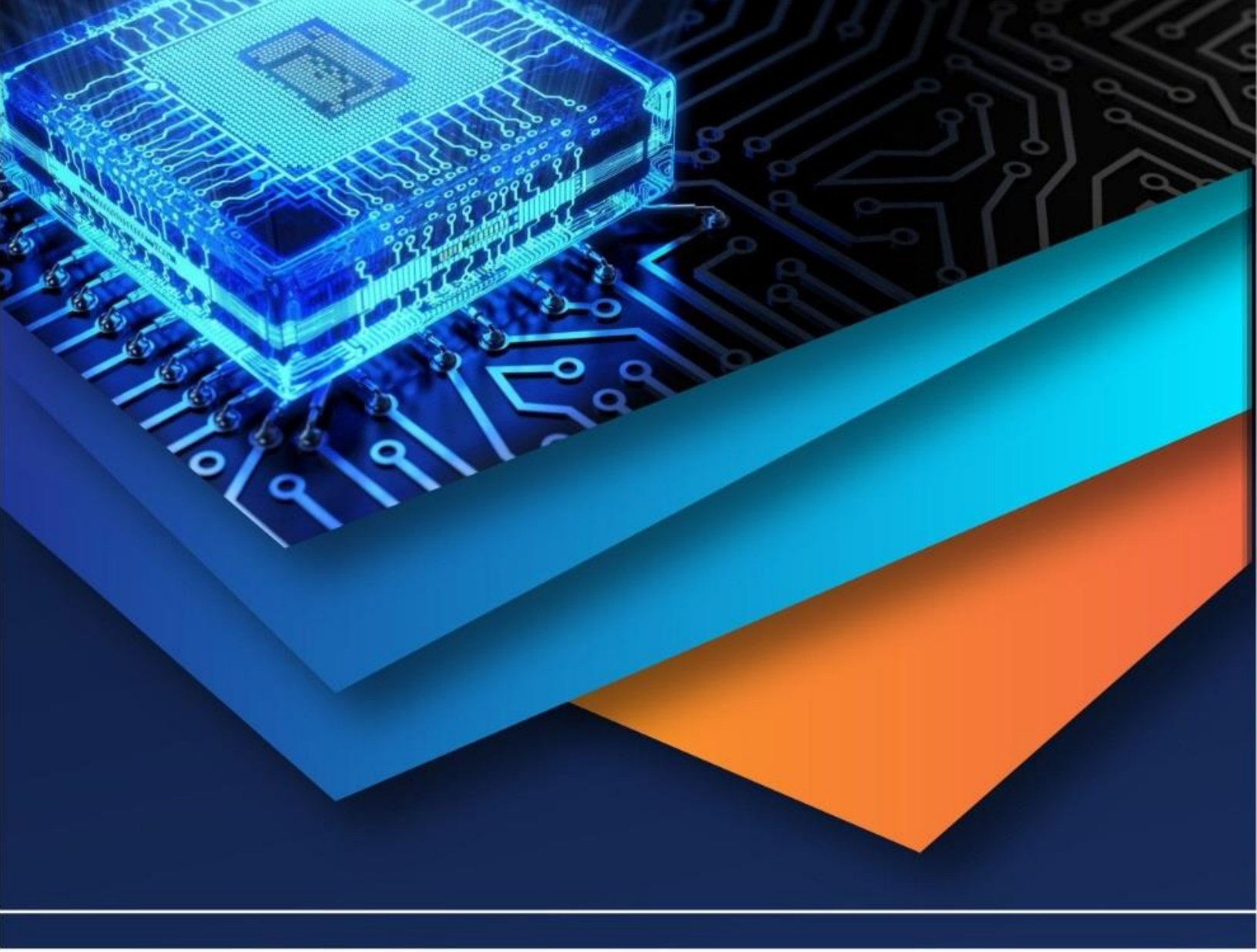

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