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Drugging Down on Life Athletes Clouding Their Minds through Substance Abuse

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Abstract: ***Drug usage is prevalent across all sports and at all levels of competition. For a variety of reasons, including performance improvement, self-treatment of otherwise untreated mental illness, and coping with pressures such as pressure to perform, injuries, physical discomfort, and retirement from sport, athletes may turn to drugs. Doping is a term used to describe this type of abuse. Doping has a long history, dating back to when organized sports existed. Improved drug testing detection technologies and improvements in scientific research have led to the discovery and use of compounds that may later be outlawed, resulting in "advances" in doping strategies. The sports persons also need to be more vigilant about the prevalent antidoping rules and regulations.***

Keywords-: Doping, Substance abuse, Performance Enhancement Nutritional supplements, Risk Factors.

I. INTRODUCTION

Substance abuse is defined as the detrimental or dangerous use of intoxicating substances such as alcohol and illegal narcotics. The repeated use of psychoactive substances can lead to dependence syndrome, which is a collection of behavioral, cognitive, and physiological symptoms. These symptoms typically include a strong desire to use the substance, difficulties in controlling it, persistence in using it despite negative effects, a preference for using the substance over other activities and responsibilities, increased tolerance, and, in some cases, a physical withdrawal state. In India, psychoactive drug misuse remains a serious problem for both individuals and society. Different drugs have been used in India for several millennia; the first mention of alcohol dates back to 2000 B.C. Alcohol use might affect not just illness incidence but also traumas and other health issues.

Many athletes seek a competitive advantage that will enable them to train harder, move farther, recover faster, or be stronger. By eating correctly, staying hydrated, using dependable recuperation strategies, using regulated training methods, and working really hard, one might get that advantage. However, some sportsmen choose to go beyond those moral bounds by giving it a go. Some athletes choose to use forbidden drugs or methods to cheat, placing them at danger of a four-year suspension from all sports, whether it was suggested by a coach or friend or was a decision taken completely for themselves. When athletes cross the line, they put more than just their careers and reputation at stake; they also endanger their health.

A. Defining Doping

Doping, defined as the use of steroids or other substances for the purpose of enhancing performance, has become a hot subject in almost every sport, with cases reported in athletes of all ages and at all levels of competition. Furthermore, performance-enhancing drugs (PEDs) do not have to be illegal or prescribed prescriptions like anabolic steroids. Nutritional supplements and a wide range of chemicals are available at supermarket and health food stores, as well as online.

The International Olympic Committee (IOC) defines doping as "the use of any substance foreign to the body taken with the sole goal of unfairly boosting his or her performance in competition."

B. Objectives Of Current Review

In this review, we will place emphasis on doping, with the goal of providing a comprehensive overview of the history of doping in athletes, the effects of various classes of doping drugs, side effects of doping, the role of anti-doping organizations, and the treatment of affected athletes.

II. A BRIEF HISTORY OF DOPING IN ATHLETES

Doping is not a new phenomenon that has evolved exclusively as a result of the increased financial rewards provided to today's best athletes. Doping is, in reality, older than organized sports. To improve performance, ancient Greek Olympic athletes drank different brandy and wine mixtures and ate hallucinogenic mushrooms and sesame seeds dating back to the third century BC.

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Various plants were utilized to boost speed and endurance, while others were employed to disguise discomfort and allow wounded competitors to compete. Doping was regarded as immoral even in ancient times.

The contemporary age of doping began with the unlawful drugging of racehorses in the early 1900s. It was initially reported in 1904 that it was used at the Olympics. Higher-level sportsmen were known to take mixes of strychnine, heroin, cocaine, and caffeine up to the 1920s.

The drugs used to unlawfully boost performance have evolved over time. Improved drug testing detection technologies have contributed to "advances" in doping strategies. Various parties have devised progressively more complex doping tactics to escape detection. Furthermore, breakthroughs in scientific research may lead to the discovery and use of chemicals that may later be outlawed, resulting in new doping methods. Cycling has experienced more high-profile doping claims than any other sport in the last 150 years. Few sports, however, have been free of doping allegations.

A. Reasons behind Use of Drugs by Sportspersons

Doping practices are usually classified into one of four types. Compounds that enhance muscle mass, shorten recovery time, boost energy and/or endurance, and substances that disguise the presence of other medications are examples of these.

Athletes may take drugs for a variety of reasons. The principal reasons can be categorized as:

1) Therapeutic use for the treatment of medical conditions
2) Social and 'recreational' use.
3) Performance enhancement.

Some other reasons may be -

a) Financial gain
b) Improving recover
c) Prevention of nutritional deficiencie
d) The idea that others use them.

B. Intentional Doping

Doping or drug misuse among athletes may include doping to achieve a competitive edge. Athletes may use drugs to cope with a variety of pressures, including pressure to perform, injuries, physical discomfort, and the end of a sporting career (which happens much earlier than retirement from most other careers).

C. Unintentional Doping/Drugging

It might also entail the use of drugs like alcohol or marijuana without the goal of improving performance, because athletes, like anybody else, can develop substance use problems. Athletes may also be less likely than non-athletes to obtain treatment for underlying mental diseases like depression. Athletes undergo extensive rehabilitation services for physical trauma, but this may not be the case for mental illness, as mental illness is sometimes perceived as a sign of weakness by athletes. Untreated mental illness is frequently linked to substance abuse, maybe as a means of self-medicating. Substance addiction, on the other hand, can lead to mental disorders.

D. Social And 'Recreational' Use Of Drugs

Drugs are widely utilized in society for social and recreational purposes all around the world. These substances vary from caffeine, which is found in many drinks, to illicit narcotics of abuse like cocaine. Athletes, like the rest of society, may follow these tendencies toward social or recreational drug usage.

Some sportsmen use performance-enhancing medications for social reasons. However, in addition to possessing possible performance-enhancing characteristics, an athlete under the influence of these medications may endanger his or her peers.

Considering this broad set of circumstances, there is a wide range of drugs that may be taken by athletes.

Some examples of these medications are anabolic steroids, androstenedione, human growth hormone, erythropoietin, diuretics, creatine, and stimulants.

Some of the variables that stimulate the use of illegal drugs include:

1) *Media Exposure:* In order to sell journals and other promotional materials, the media frequently devotes significant attention to doping controversies in sports. This might give the athlete a false idea of how common performance-enhancing substances are in sports.

2) *Peer Influence:* Athletes may directly watch or hear about their peers' usage of performance-enhancing substances. Athletes may also be given performance-enhancing medications by fellow players or teammates.
3) *Support Staff Pressure:* Athletes' supporters, such as family members, coaches, and healthcare experts, may put additional pressure on them to enhance their performance by whatever means possible.
4) *Substance Availability:* Athletes may now buy practically any product they choose over the internet, in addition to the more conventional avenues of drug supply.
5) *Factually Inaccurate Information:* Some supplements that appear to be harmless may include residues of banned chemicals. Furthermore, some supplement labels may not be thorough or accurate.
6) *Profound Ignorance:* Athletes are not pharmacologists, and the abundance of information on pharmaceutical labels might be mystifying to the inexperienced eye.

E. Prevention And Control

Performance-enhancing drug (PED) use is prohibited by several sporting organisations, and anyone found taking them face harsh penalties. The International Association of Athletics Federations (IAAF) was the first international sports governing organization to take notice of the problem.

The first official drug testing of athletes took place during the 1966 European Championships, and the International Olympic Committee (IOC) followed suit two years later, testing participants at both the Summer and Winter Olympics. During the 1970s, anabolic steroids grew even more popular, and they were added to the IOC's restricted drugs list in 1976 after a detection method was discovered.

In the late 1970s, as a result of this, the number of doping-related disqualifications skyrocketed, particularly in strength-related sports like throwing and weightlifting. While the battle against stimulants and steroids was yielding successes, the anti-doping war's major battleground was swiftly turning to blood doping. Since the 1970s, athletes' blood has been removed and then reinfused to enhance the amount of oxygen-carrying hemoglobin in their bodies. In 1986, the International Olympic Committee (IOC) banned blood doping.

However, other methods of boosting hemoglobin levels were being investigated. Erythropoietin was one of them. Erythropoietin was added to the IOC's list of forbidden drugs in 1990, but the absence of a reliable testing technique delayed the campaign against it for a long time. At the 2000 Olympic Games, an erythropoietin detection test was introduced for the first time.

F. WADA - Origin

The Tour de France doping incident emphasized the need for an impartial, non-judicial worldwide institution to establish universal anti-doping standards and coordinate the actions of sports organizations and governments. In February 1999, the IOC took the initiative and hosted the First World Conference on Doping in Sport in Lausanne. In 1999, the World Anti-Doping Agency (WADA) was founded in response to the Conference's suggestion.

G. Role

The World Anti-Doping Agency (WADA) was established in 1999 and in 2004 it redefined doping as the ‘occurrence of one or more of the following antidoping rule violations mentioned in the WADA code. Antidoping rule violations mentioned in WADA code:

1) The presence of prohibited substances or its metabolites in an athlete’s bodily specimen.
2) Use of a prohibited substance or a prohibited method.
3) Refusing or evading sample collection.
4) Violation of athlete availability for out-of-competition testing including failure to provide required whereabouts information which are declared based on reasonable rules.
5) Tampering or attempting to tamper, with any part of doping control.
6) Possession of prohibited substances and prohibited methods.
7) Trafficking in any prohibited substance or prohibited method.
8) Administration or attempted administration of a prohibited substance or prohibited method to any athlete.

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III. LIST OF DRUGS BANNED IN SPORTS BY WADA AND THEIR RESULTANT SIDE EFFECTS

Only stimulants, narcotics, and analgesics were on the IOC's forbidden list of substances in 1967. At the time, there were about 40 to 50 medicines and metabolites on the banned list, which was updated on a regular basis by the IOC Medical Commission until WADA was established in 1999. The prohibited list was updated/revised in a variety of ways, including the addition of a new group to the list or the addition of a new substance to an existing group. The change might be in regards to a drug's threshold concentration or the minimum needed performance limit (MRPL).

Currently, the list contains over 300 medications and metabolites that fall under the following drug categories:

1) Prohibited Substances in Sports

a) S0—Non Approved substances
b) S1—Anabolic agents
c) S2—Peptide hormones, growth factors and related substances
d) S3—Beta-2 agonists (except salbutamol, salmeterol and formoterol)
e) S4—Hormone and metabolic modulators
f) S5—Diuretics and other masking agents
g) S6—Stimulants
h) S7—Narcotics
i) S8—Cannabinoids
j) S9—Glucocorticosteroids

2) Prohibited Methods in Sports

a) M1—Manipulation of blood and blood components
b) M2—Chemical and physical manipulation
c) M3—Gene doping

3) Substances Prohibited in Specific Sports

a) P1—Alcohol
b) P2—Beta-blockers

IV. EFFECTS OF USING PROHIBITED SUBSTANCES AND METHODS

Drug abuse may result in significant, even life-threatening, repercussions. The following detrimental impacts may occur for athletes:

1) *Suspensions and Bans:* A lot of professional sporting organizations have severe policies against using recreational and performance-enhancing substances. Athletes who break these regulations may suffer severe repercussions including suspensions or bans. Prior titles, medals, or awards may occasionally be withdrawn. These effects have been felt by professional sportsmen including Brett Favre, Steve Howe, and Lance Armstrong.
2) *Job loss and/or Early Retirement:* Drug addiction can make it difficult for an athlete to concentrate, among other detrimental effects on their performance. Certain medicines can have a variety of negative effects, including withdrawal symptoms that might impair performance. Due to the harmful repercussions of their drug usage, some sportsmen may be pushed into an early retirement.
3) *Health Issues:* Using anabolic steroids can lead to cardiac issues, hypertension, and liver and kidney damage. Depression, rage, and aggression are only a few examples of mental impacts. Women may suffer changes in menstruation and the emergence of masculine traits, whereas males may experience impotence, infertility, and the development of certain feminine sexual characteristics (such as the growth of breast tissue).

A. Substance Specific Effects

1) S1 ANABOLIC AGENTS Anabolic Androgenic Steroids (AAS)

Side Effects

a) General Side Effects

- Greasy skin and acne
- Infertility
- Hypertension
- Liver and kidney dysfunction

- Aggressive behavior
- Tumor

b) Male specific Effects:

- Breast development
- Testicular atrophy
- Diminished male hormone production
- Diminished sperm production
- Impotence
- Prostate cancer

c) Female specific Effects:

- Male pattern hair growth and baldness
- Menstruation disturbances
- Decreased size of breast
- Deeper voice (hoarseness)

d) Side Effects of some other Anabolic Agents:

- Trembling
- Restlessness, aggressive behavior
- Anxiety
- Muscle cramps

2) S2 hormones and related substances

Side Effects

- Increased viscosity of blood
- Myocardial infarction
- Cerebral infarction
- Pulmonary embolism
- Acromegaly (overgrowth of limbs)
- Soft tissues swelling
- Abnormal growth of organs
- Arthropathies (joint disorders)
- Diabetes mellitus
- Menstrual disorders
- Gynecomastia (breast development in males)
- Hypoglycaemia
- Nausea
- Drowsiness
- Brain malfunctioning
- Insomnia
- Hypertension
- Stomach ulcers
- Osteoporosis

3) S4 Hormone Antagonists And Modulators

Side Effects

- Hot flushes
- Gastrointestinal disorders
- Venous thrombosis

4) S6 Stimulants

Side Effects

- Loss of appetite
- Insomnia (loss of sleep)
- Euphoria
- Hallucinations (Psychosis)
- Trembling
- Restlessness, agitation, tenseness
- Hypertension
- Palpitation and heart rhythm disorders
- Hyperthermia (increased body temperature)

5) S7 Narcotics

Side Effects

- Addiction
- Loss of balance and coordination
- Nausea and dizziness
- Insomnia & depression
- Decreased heart rate

6) S8 Cannabinoid

Side Effects

- Impaired balance and coordination
- Loss of concentration
- Increase in heart rate
- Increased appetite
- Drowsiness
- Hallucination

7) S9 Glucocorticosteroids

Side Effects

- Fluid retention
- Hyperglycaemia
- Systemic infections
- Musculoskeletal disorders

8) P1 Alcohol

Side Effects

- Impaired judgment
- Loss of reflexes and muscular coordination
- Slurred speech
- Sleepiness and poor respiration

9) P2 Beta Blockers

Side Effects

- Hypotension
- Decreased heart rate

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10) M1 Enhancement Of Oxygen Transfer

Side Effects of Blood Doping:

- Increased blood viscosity
- Clotting susceptibility
- Hypertension
- Vasoconstriction
- Kidney dysfunction
- Risk of cardiac arrest, brain stroke and pulmonary embolism

11) M2 Chemical And Physical Manipulation

Side Effects:

Cystitis (bladder infection) and other dysfunctions and disorders depending upon the type of manipulation.

V. NUTRITIONAL SUPPLEMENTS IN SPORTS

To increase performance, the athlete turns to non-pharmaceutical items, particularly nutritional supplements. Although the right use of nutritional supplements under competent scientific direction may be safe, there are specific situations where this is not the case: For example, if a product includes one or more illegal chemicals, a positive doping test may follow. This is true for (a) herbal products, in which the active ingredients may be labeled under many names. (b) prohormones, in which the active principles are metabolic counterparts of endogenous steroid hormones, as appropriately mentioned on the label, and (c) contamination of mislabeled goods, in which an athlete may be uninformed of the existence of a prohibited drug. The presence of unlawful chemicals in this situation might be the consequence of contamination or fraud. In any event, if an athlete acquires nutritional supplements from a company that sells banned drugs, he or she is taking a huge risk. As a result, it is suggested that approved nutritional supplements be used.

A. Helpful Advice For Supplement Use

The World Anti-Doping Agency (WADA) urges utmost caution:

The use of dietary supplements by athletes is a source of worry since supplement manufacture and labeling may not adhere to tight guidelines in many countries. This might result in a supplement having an undisclosed ingredient that is illegal under anti-doping rules. Misuse of supplements has been linked to a large number of positive tests, and using a poorly labeled nutritional supplement is not a viable defense in a doping hearing.

B. Treatment And Rehabilitation Of The Victims Of Substance Abuse

Several different kinds of treatment programmes are available to athletes who are struggling with addiction:

1) Inpatient treatment programmes are those in which a patient resides in a facility throughout the course of their care. The degree of care determines how long a therapy will last. Intensive group, individual, and family therapy, detoxification, aftercare, medication management, and numerous amenities are just a few of the services that may be provided.

2) Programs for outpatient treatment - These provide therapy for a number of hours each week, with participants returning to their homes or other residences while treatment is not in session. The particular programme determines the degree of therapy. While partial hospitalization programmes (PHP) may give treatment for 5 days or more per week, intensive outpatient programmes (IOP) normally offer therapy for 2 to 4 days per week.

3) Twelve-step programmes can assist people in making connections with other recovering individuals and locating assistance during the healing process. While some 12-step programmes are modeled after Alcoholics Anonymous, others provide 12-step facilitation that isn't associated with an anon-group.

Athletes recovering from drug use disorders might benefit from a variety of therapies offered by addiction treatment clinics, including:

a) CBT (Cognitive behavioral therapy) is a form of treatment used to treat addiction that enables patients to recognise and alter unhelpful thoughts and actions. In addition to teaching relapse prevention and coping mechanisms, therapists assist patients in understanding the connection between their ideas, feelings, and actions.

b) People in the early stages of recovery might use motivational interviewing to overcome their resistance to change. The "precontemplation" stage of transformation is characterized by contradictory emotions that athletes may have towards their drug usage when they first enter therapy. Helping people understand the effects of their usage, cultivate motivation to stop, and start making changes is the aim.

C. The Bottom Line / Summary

1) Athletes may use drugs for a variety of reasons, ranging from social behavior to illicit performance improvement.
2) Therapeutic Use Exemption processes may be used when medications on the WADA Prohibited List are prescribed for valid medical problems.
3) Athletes may be influenced to use unlawful performance-enhancing medications by a variety of circumstances.
4) Athletes face harsh sanctions/penalties if they utilize forbidden substances improperly.
5) In order to ensure the safe and legal use of pharmaceuticals in sports and promote the anti-doping message, healthcare professionals may provide crucial expert advice and help.

Do performance-enhancing medications improve results? Some athletes may appear to benefit physically from the use of these medications, but at what cost?

Long-term consequences of performance-enhancing medications have yet to be thoroughly investigated. Short-term gains are offset by a slew of hazards. Not to add that most sporting organizations forbid doping.

Using performance-enhancing medications is perilous business no matter how you look at it.

Drug addiction among athletes is a serious problem with a variety of possible reasons. The desire to be the greatest in sports, as well as the usage of performance-enhancing drugs, may be traced back to ancient times. With the ever-increasing demands that athletes endure, it's no surprise that drug usage is prevalent among athletes of all sports and ages.

Trainers, coaches, and health care providers should provide evidence-based, safe alternatives to PED use, including optimal nutrition, weight-training strategies, and psychological approaches to improving performance, all of which may help with athletes' confidence in their natural abilities.

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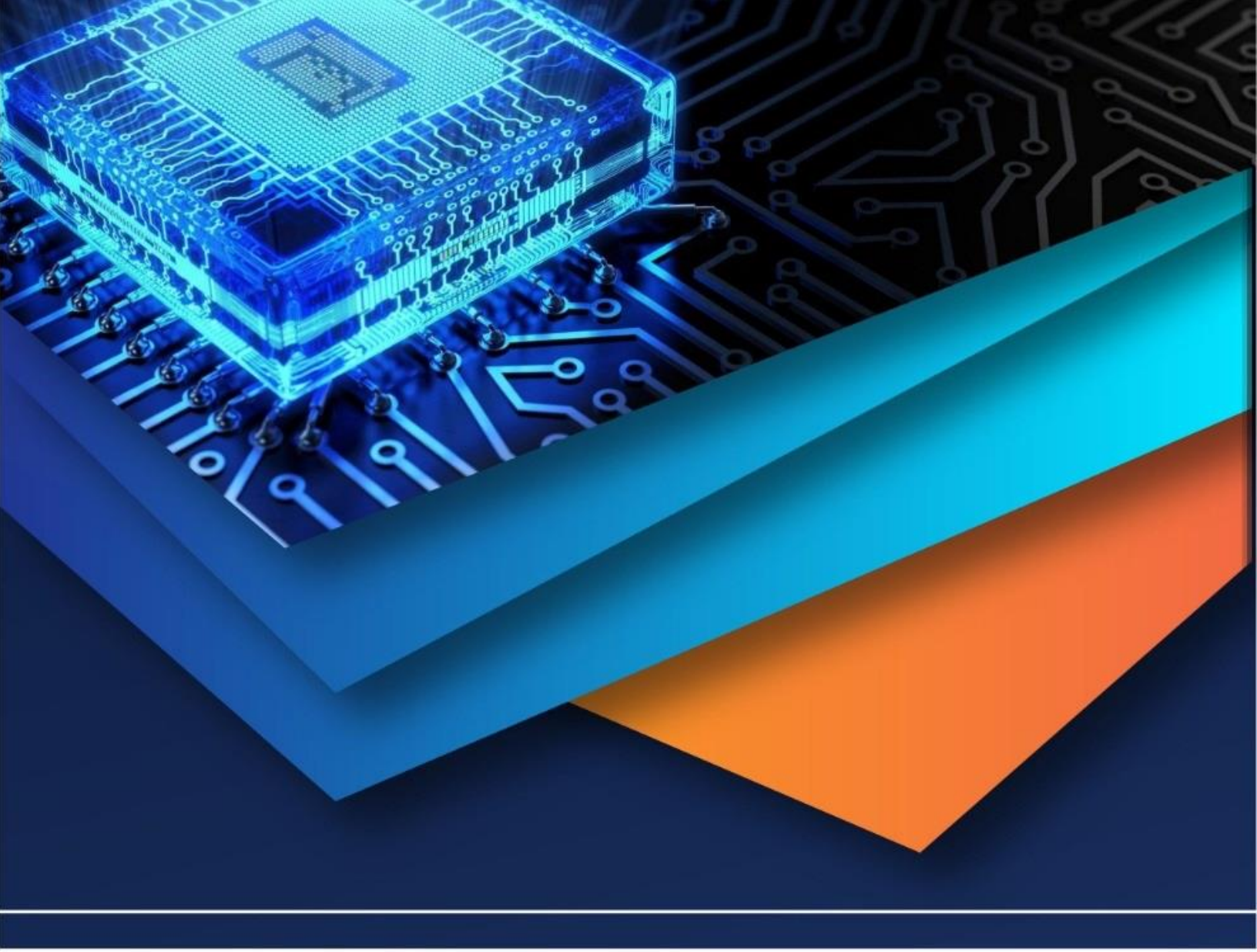

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