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Meet the teens obsessed with skins; desirability on anti-aging drugs and treatments, survey by med-students

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Abstract. Background and Aims : In this article we will discuss about the desirability of our teens on Anti-Ageing drugs and treatments. Ever since the civilization, the human always dreamed of an immortality. When one touches their adulthood, they get more obsession with their own skins . Which leads them to spend the tons and tons of money on the anti aging products and treatments as well as on drugs. The purpose of the following article review is to focus and analyze the current knowledge on the study of the most current i.e, promising "Anti-Ageing drug", which is Rapamycin. Some treatments that include Xeomin or can say Botox. Also we will discuss about the another Anti-Ageing drug, Metformin. The particular study will focus on pros and cons as well as the discussion on an "Anti-Ageing" drugs and treatments, whether it should be used or not, which is almost in use by everyone now a days. Methods : All relevant English language review articles and recommendation on Survey and Discussion on the desirability on "Anti-aging" Drugs were searched in Pub-Med, Scopus, Google-Scholar and Medline Databases These are the following keywords used to searched for the relevant literature, and the discussion on the Survey Of an Anti-Ageing drugs and treatments : "Anti-Aging", "Rapamycin", "Metformin", "Xeomin", "Botox", "Skin Care", "Pre-Mature Aging". The article addressed instructional methods, influencing factors, therapeutic approaches for the teens get influenced for the use of Anti-Aging Drugs and treatments. we will analyze and evaluate the pros and cons and the discussion including conclusion for the youth in lucrative market. The concentrations and recommendations on the outlook may improve the competence of the information provided by the medical health-care professionals to an Influenced Individual.

Keywords: "Anti-Aging", "Rapamycin", "Metformin", "Dysport", "Xeomin", "Botox", "Skin Care", "Pre-Mature Aging".

Introduction

Very first we will concentrate on what is an aging process which comes in everybody's mind. It is basically, the process which is continuous and of change which is natural that

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accurately begins in an early adult age or can say adulthood. If we consider it in medicine, then at the biological level, it is an accumulation of a huge variety of cellular and the molecular damage over the period and time.

Now a days, we consider Rapamycin as the most current i.e., promising "Anti-Aging" drug, which is basically a compound that produced by the bacterium called as *Streptomyces Hygroscopicus*. Rapamycin which also known as Sirolimus among clinics and sold as the brand which named as Rapamune. Initially it was used as Anti-Fungal but however most commonly it is now used in clinics as Immuno-suppressant that prevent the rejection of organ during the transplant-surgery. If we see the mechanism of action about Rapamycin, than it is an immnosuppressive and having Anti-proliferative properties having an ability for the inhibition for the activation of T-cells and the B-cells. It decreases the cell sensitivity to IL2 i.e; Interlukin2, immune system having the molecule which helps for the regulation of WBCs. It works by the inhibition of mechanistic-target (mTOR) of Rapamycin. In an individuals, mechanistic-target is protein kinase which encoded by (mTOR) gene and plays a vital role in amino acid pathways, growth factor, insulin, brain functions, liver function, muscle function and for tissues as well as regulating the metabolism, sensing the oxygen, levels and energies.

Concentrating on another "Anti-Ageing" Drug, Metformin. Sold with the brand i.e, named as "Glucophage". This basically lowers the sugar level of blood by improving as the way the body handles an an Insulin that mainly prescribed such as for the diabetes. Recently Metformin has gained much popularity for more health advantages or can say benefits as, extending or increasing the individuals lifespan. But the above benefits has not been supported by high quality evidences. It has got much renewed attentions for the possible uses as the Anti-Ageing medications. Even some have referred this as "Wonder-Drug".

Subject and methods :

If we talk about, the uses of an "Anti-ageing" drugs by youth in lucrative market of cosmetic industry then, Rapamycin today is an approved drug by FDA. It prevents the body defence system for fighting from foreign infection and invaders. But in real it is an immunosuppressant which mainly suppress the immunity or can say that it inhibits the cell growth. If the foreign particles, or invaders invades the human body and

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cause the infection, then human body is unable to fight with the invaders because our immunity is already suppressed by the Rapamycin so how it will fight ? Because of that infection become more severe which eventually leads to the death of an individual.

Can Metformin increases lifespan or is slow ageing ?

The research is still not clear. Based on some early studies and research, researchers asked the same question, whether the drug Metformin can actually slow ageing, increases the lifespan, prevent many age related problems and health condition. This is basically based on a research that basically includes : it has been shown to reduce the age related risks and diseases including heart and cancer disease also in people having diabetes. Metformin basically appears as to improve the metabolic-markers in an older adults include an Insulin level, sugar level of blood, DNA repair. It also lowers the inflammation which we already know that plays a vital role in an ageing process. It is also said in a research that in Mice, Metformin increases the lifespan. Metformin now a days is not recommended for the benefits for Anti-Ageing and more research is needed.

Some PROs about Anti-Ageing Drugs :

- Mainly prevents from organ transplant rejections after the surgery. (Basically works as an Immuno-suppressant)
- Treat some cancer types. (works as Anti-proliferative)
- Also treat diseases of Cardiovascular System Diseases, as heart-stents coating which is used to block arteries.
- There is CMV infection, so Rapamycin basically reduces the risk of this infection during the organ transplantation in patients.
- Even in mice as well it basically improves the antipathogen in mice and anticancer immunity also.
- Rapamycin also does the function of inhibition i.e, it basically inhibits the Viral Replication.
- Slows the development and aging which is the main focus of teens and youth now a days in lucrative market.
- Increases the Life-Span which the main focus of our Youth since they touches their adulthood.
- Even for better health Rapamycin counts as its pros.
- For longer life, better health, prevention of cancer disease as well as prevention of heart diseases.

Some CONs about Anti-Aging Drugs

- As every coin has two sides, the same way if there's some PROs, then we have some CONs as well. There are tons of

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side-effects of this Anti-Ageing drugs, such as:

- Diarrhea
- Nausea or Vomiting
- Stomach Pain
- Headache
- Long term usage of Metformin leads to VitB12 Deficiency and Anemia as well.
- Metformin can also interact with other medications like thyroid and diuretics medications as well.
- More usage of this rapamycin drug can lead to decrease in the count of the blood cells.
- There can be reversible as well as mild thrombocytopenia i.e, low platelet count,
- Leads to anemia for overdose Rapamycin dose.
- Also leads to leukopenia after the overdose of Rapamycin.
- Some more side effects for the high concentrations of Anti-Ageing can be peeling or can say dry skin.
- There can be breakouts as well with the high concentration of these drugs including burning sensation.

Anti-Ageing Treatments :

Ageing mainly affects the skin from the different parts in a different way. For the achievement of a good youthful or teenagers appearance, different treatments are required. These treatments and a huge remedies for Anti-ageing have been used for centuries. There are some latest and new technologies as well as treatments for providing the better outcome of the youth with their youthful glow.

One of the treatment i.e; BOTOX- one of the most popular and considered as a better anti-ageing treatment. It has been used since 2 decades for cosmetics it basically reduces the wrinkles and gives the fine lines, even though it is temporary. Causes of face wrinkles is because of muscle relaxation as well as contraction. How much it will relax and contracts, that much formation of creases occurs on the skin which increases the ageing signs and symptoms. For this as well Botox treatment is used. This basically works on freezing the muscles. This prevents the relaxation as well as the contraction about Three to Six months.

Other such type of treatment i.e; Dysport or which is also known as Xeomin is designed treatment for the several area of our skin or can say the glabellar lines. Because of our normal face expression we get susceptible lines between the area of the brows. So the reason Dysport or Xeomin

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treatment is used to clear the fine lines because of squinting of the areas between the eye brows. The muscle get freezed by this treatment in the particular area by creating the appearance of "Mooting" and somehow reversing the symptoms and sign of the ageing.

Some PROs about Anti-Ageing Treatments :

- This treatments basically restore the supply i.e, natural, of collagen by maintaining the effective plumpness of our skin.
- From the treatment, our facial muscles relaxes which keeps the moods and minds calm of an individual.
- By getting the treatment, it provides the improvement in an individuals self-confidence.
- The treatment of this anti-aging is consider as non-invasive.
- Wrinkles fades away
- Finelines in any particular area also fades away by this treatment.
- smoothness and moisturization of face gets better by dermal treatment of face including anti-aging treatment.
- Removes the tanning of the skin
- Removes the dark circles from the faces.
- Treatments Refines the skin texture.

Some CONs about Anti-Ageing Treatments :

- There are many complications and risks comes with the anti-ageing treatments like many side effects such as :
- dryness of the particular area of the skin or face.
- there can be itching of the skin zone treated with the products.
- Some products does not suits on our skin and use of them leads to the redness and more dryness of the skin
- There can be ulceration in the face due the large amounts of usage of the products which can be allergic to our skin.
- Some products are sensitive to the sunlight and the use of them leads to the sensitivity to the sunlight
- Irritation
- Dryness
- Ulceration

Allergic Reactions

- More wrinkles appearance in an early age
- discolourization of natural skin color on the face due to more usage of products which is allergic to our skin.
- burning of the skin.

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Discussion :

Anti-ageing drugs and treatment has been in use since a decade now. Every now and then, our teens and youth in this lucrative era uses this in a very large scale. Number of cases were observed with a positive feedback while using these drugs and several products for treatments. But there are many cases in this era, where we can see a huge number of negative feedback as well with the usage of drugs and products for the treatment. In the above analyzation we have seen several pros and cons about Rapamycin like it can be used during organ transplantation surgery or as immunosuppressant. But it has been analyzed that there are some cons as well which affects an individual, and same goes with the Metformin drug and many more.

If we discuss about the treatment on anti-ageing products then also we have analyzed some pros as well as some cons regarding that. In the treatment we have seen that an individual can get rid of their facial problem like wrinkles, fine lines, tanning, dark circles, pimples etc. But vice a versa we can get this facial problems more even after getting the treatment due to the allergic reactions of the products used for treatment with the skin.

Conclusion :

The network indicates that the drugs and treatments already has been spread on a large scale. we can use it but if its too mandatory or no other options left for us. But the usage of this should be very less advisable because If an individual can focus on their healthy diet then there is no need of usage of Anti-Aging Drugs and products for treatment. Hence although there are many PROs for the Anti-Aging Products but simultaneously it has some CONs too. So, the Youth or Teens should focus on their healthy and proper diet instead of usage of large amount of drugs and products for treatment.

References:

- [1] National Institute on Aging: "Skin Care and Aging." American Academy of Dermatology: "Mature skin" and "Protection Against Photoaging." FDA.
- [2] Zoncu R, Efeyan A, Sabatini DM. mTOR: from growth signal integration to cancer, diabetes and ageing. *Nat Rev Mol Cell Biol.* 2011; 12:21-35.
- [3] Dantel J, Morelon E, Rostaing L, Goffin E, Brocard A, Tromme I, Broeders N, Del Marmol V, Chatelet V, Dompmartin A, Kessler M, Serra A, Hofbauer GF, et al., and TUMORAPA Study Group. Sirolimus for Secondary Prevention of Skin Cancer in Kidney Transplant

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Recipients: 5-Year Results. *J Clin Oncol.* 2018;

- [4] Campbell, J. M., et al. (2017). Metformin reduces all-cause mortality and diseases of ageing independent of its effect on diabetes control: A systematic review and meta-analysis. *Ageing Research Review.*
- [5] Feng, J., et al. (2022). Mitochondria as an important target of metformin: The mechanism of action, toxic and side effects, and new therapeutic applications. *Pharmacological Research.*
- [6] Martin-Montalvo, A., et al. (2013). Metformin improves healthspan and lifespan in mice. *Nature Communications.*
- [7] Morales, D. R., et al. (2015). Metformin in cancer treatment and prevention. *Annual Review of Medicine.*
- [8] Kuss-Duerkop SK, Wang J, Mena I, White K, Metreveli G, Sakthivel R, Mata MA, Muñoz-Moreno R, Chen X, Krammer F, Diamond MS, Chen ZJ, García-Sastre A, Fontoura BM. Influenza virus differentially activates mTORC1 and mTORC2 signaling to maximize late stage replication. *PLoS Pathog.* 2017; 13:e1006635. 10.1371/journal.ppat.1006635
- [9] Baumann L. Skin ageing and its treatment. *J Pathol*
- [10] Marini A. [Beauty from the inside. Does it really work?] *Hautarzt.*
- [11] Draelos ZD. The latest cosmeceutical approaches for anti-aging. *J Cosmet Dermatol.*