Junctional Epidermolysis Bullosa Gene Therapy

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Background To The Scientific Study

The study in the journal article talks about a lethal skin disease known as junctional epidermolysis bullosa. This disease is caused by the mutations in genes (Dang and Murrell, 2015, p.23). The people who are attacked by JEB develop skin diseases. The chronic wounds on the patient's skin result in the development of skin cancer. In this study, a seven-year-old boy is suffering from Junctional epidermolysis bullosa. The disorder came because of the generation of autologous transgenic keratinocyte culture (De Rosa et al.2014,p.5). The study in the journal focuses on transforming the lives of the boys to be better ones. Many patients affected by junctional epidermolysis bullosa die before reaching their adolescent stage; however, the study in the journal combines several approaches to save the life of the seven-year-old boy. The above research applies the method of gene therapy and ex vivo cells using other stem cells to deal with the epidermis. The study uses clonal tracing, which shows that the skin of human beings is enhanced by the existing small number of old stem cells. There are three genes in the human body, which include LAMB3, LAMA3 and LAMC (Kiritsi et al.2015, p.200); the mutation of these genes results in the epidermis.

Summary Of Key Findings

From the study in the journal article, all the epidermis of individuals suffering from JEB can possibly be treated by autologous transgenic epidermal cultures. This way of replacement should contain the appropriate number of stem cells. All mammals should have a proper generation of tissue in their cells, and the only way to prove the development is the existence of stem cells. According to the study, many clinics have used epidermal cultures for more than 30 years to control JEB. However, there is a challenge in proving the engraftment of stem cells, which are cultured. In addition to that, there is also indirect evidence that holoclones identification of stem cells from human epithelial regeneration. Another important thing evident in the study is that transient amplifying progenitors do not survive for long after grafting.

In the journal, the study states that they wither after two months of grafting (Melo et al.2014, p.730). The progenitors may persist for a period, which is essential during the repair and renewal of the stem cells. Besides that, there are some cells that contribute very little to the generation and healing of wounds in the human body. As shown earlier in the study, those people who suffer from JEB have several injuries in their bodies that even cause skin cancer. Before grafting on the patient, there must

be enough cells to form the holoclones. In the other part of the journal, epidermis can be generated by transgenic epidermal stem cells. On the other hand, the study has given room for the use of therapy to heal some epidermolysis (Masunaga et al.2015, p.64).

The findings in the journal are supported by the data. For instance, the data shows that the paraclones and meroclones cannot renew themselves. They are increasingly lost during the renewal of epidermal in vivo. Therefore, these two holoclones cannot be used in the maintenance of the epidermis. The sample used in Figure seven in the journal shows that the original holoclones need to go through self-renewal to regenerate skin.

Strengths And Weakness Of The Study

Every study has its strengths and weaknesses. When analyzing the survey in this article journal, its advantage is that it combines the two methods to find the solution to the boy's problem. The study combines gene therapy and ex vivo cells to find the best solution for the patient. It is evident that after six weeks in the hospital, the health of the seven-year-old boy had turned worse. The evidence made the medical team conclude that the method of therapy was not the best approach (Sartelet et al., 2015, p.545). Another critical strength of the study is that it provides room for the use of other methods of diagnosing this infection. In the last part of the study, it is elaborated that further studies are required to prove some of the things related to the gene approach to dealing with JEB (Sproule et al.2016, p.60). However, on the weakness part, the research only focuses on how to treat the infection but fails to show how to prevent the disease. As much as treatment is right, it is better to avoid than cure. If it were a matter of mutation or generation, the study would have outlined the ways in which the disorder occurred over generations to prevent the attack on many other people.

Reflection On Whether Newspaper Article Accurately Reports The Results Of The Study

The procedure of helping the boy in this article matches what is in the study. The doctors used the grafting method whereby a piece of the boy's body skin was added to the regular part of his skin. This is a process of grafting, as stated in the study. The doctors have applied gene therapy to heal the boy (Pfendner and Lucky, 2014, p.87). The study illustrated that epidermis infection is a mutation problem, and gene therapy is another best way to deal with the disease. On the other hand, the accuracy of the news article may be questionable. The news article has some limitations. For instance, the article does not clearly outline how the doctors performed the grafting procedure. This limitation might make someone doubt if the process was active or not. In addition to that, the article would have elaborated on the changes that the seven-year-old boy was going through after the therapy process. It has jumped to the conclusion of how the boy was moving well, not elaborating on the changes. On the last bit, the articles fail to talk about other methodologies that may have been used but failed.

The news article does not efficiently provide awareness to medical students. It may only be relevant to people who may have been in the field for a long time. However, the news has been well arranged, and the methodology applied is evident. Despite the message being direct, it has elaborated on one of the best ways of dealing with the infection, which is gene therapy.

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