Introduction

There are many ways to heal the body. Modern medicine is one of the greatest innovations of all time, but it is important to also understand that there are also many alternative therapies available. The human body contains peptides, which are chains of amino acids that make up proteins, however, they can also be made artificially (Sonn, Care, & Bergsma, 2017). The idea of taking a component already found in the body and enhancing it is the idea behind using peptide therapy. Peptides can be used for so many different ailments and help the ability to help someone in one way or another. Although there is a lack of knowledge on the subject matter, peptides are more commonly used than most would expect. Since peptides make up proteins, it is important to note that the first protein that was created for medicinal use was insulin (Shuman et al., 1977). The pathophysiology behind the idea of peptides is in depth, but also brings the viability of the idea that peptides can have so many side effects with the never-ending list frightening to many consumers. Peptides offer a more natural path to healing, and many people would benefit from the usage of peptides.

Reason for Choosing Topic

• Personal association with someone who suffered from a dog bite who used peptide therapy successfully.
• Dog bite created a severe laceration that required local and eye surgery.
• Healing was greatly improved with the use of injectable peptides TPA and BPC 157.
• Alleviated the need for a skin graft that was recommended by surgeon.
• Personal association with someone who had bisulfide deficiencies due to abdominal malabsorption.
• Bisulfide deficiencies were corrected with the use of injectable BPC 157 along with an elimination diet.
• The ability to heal wounds, skin disturbances, and fatigue were alleviated with this treatment.

Signs & Symptoms

Indicators for peptide therapy are vast. Healing is required for all disease processes; therefore, the usage could be widely appreciated. Possible ailments that cause varying degrees of signs and symptoms could benefit from the usage of peptides. A few examples include:

- Wounds
- Peptic ulcers
- Fractures
- Muscle injuries
- Cancers
- Autoimmune diseases
- Cardiac injuries
- Anti-aging treatments

Table 1. Source of chemical nature of early peptides (Lau & Dunn, 2018)

<table>
<thead>
<tr>
<th>Peptide</th>
<th>Source of Chemical Nature</th>
<th>Introduction to the Clinic</th>
<th>Sequence description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPA</td>
<td>Isolated from canine and bovine pancreas</td>
<td>Native</td>
<td>1959</td>
</tr>
<tr>
<td>Adrenocorticotropic hormone (ACTH)</td>
<td>Isolated from bovine pituitary glands</td>
<td>Native</td>
<td>1958</td>
</tr>
<tr>
<td>Calcitonin</td>
<td>Isolated from salmon ultimobranchial gland</td>
<td>Native</td>
<td>1971</td>
</tr>
<tr>
<td>Bovine epitelin</td>
<td>Synthetic</td>
<td>1962</td>
<td>Native</td>
</tr>
<tr>
<td>Leuprolin</td>
<td>Synthetic</td>
<td>1962</td>
<td>Native</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>Synthetic</td>
<td>1988</td>
<td>Synthetic analog of somatostatin-14</td>
</tr>
<tr>
<td>Desmopressin</td>
<td>Synthetic analog of vasopressin</td>
<td>1984</td>
<td>Nonapeptide analog of decapeptide vasopressin</td>
</tr>
</tbody>
</table>

Study 1

• The purpose of this study was to research a peptide derived from stromal cells known as BPC 157.
• The peptide was tested for its effects on tendon fibroblasts from the achilles tendon of rats using culture plates and microarray analysis.
• The peptide was tested in different levels and with the addition of growth factors to see what would work.
• The conclusions were in agreement with the above results that showed the peptide to promote healing in skin, tissue, bone, and muscle.
• The use of the BPC 157 naturally increased the growth hormone and would be a cost-effective alternative to current growth hormone therapy.

Study 2

• The purpose of this study was to examine the effects of BPC 157 on muscular skeletal injuries via intramuscular and topical administration.
• This study was done on small rodents with the variety of different tendons, ligament, and skeletal muscle injuries. The conclusion showed positive results for soft tissue injuries with the use of the peptide in every model.
• The peptide was simply oligomers or polymers of amino acids.
• They are connected to peptide bonds between amino acids.
• A peptide is a protein when it contains over 100 amino acids.
• Peptide and proteins = encoded biochemistry.
• Highly specific functions are decided through genetics.

Study 4

• The purpose of this study was to test the topical use of BPC 157 on burn sites.
• The study was completed with the use of unamplified alabino burned rats.
• The conclusion showed that the peptide accelerated wound closure.
• On day 18, the treated rats had 80% closure while the untreated group only 60%.
• These results were positively correlated with a previous study done on rats burned by open fire.

Study 5

• The purpose of this study was to examine the many uses of Thymosin, including T4.
• Research was completed on the many uses of this peptide, including angiogenesis, wound healing, and inflammation.
• Data was collected on a variety of subjects including mice, dogs, and even humans.
• Conclusions displayed positive results that included inhibiting ischemia and other adverse effects.
• Discussion of future studies using this peptide for cardiac disease are in progress with the hypothesis of positive effects for all ages of injuries.

References

- Understanding peptides in the body has led to the creation of artificial peptides that mimic these effects.
- Synthetic peptides can be used as:
  - Cancer treatment drugs
  - Antibodies
  - Enzyme substrates
  - Enzyme inhibitors
- Due to limited availability of human immunodeficiency virus (HIV) and other viruses, the body is trying to understand the design of new, naturally occurring peptide structure.
- A example of a breakthrough for peptides is when an enzyme is introduced in the body.
-Tiara has many properties beneficial for inflammation, tissue remodeling, angiogenesis, wound healing, and repair.

Figure 1. Biochemical communication exerted by peptides (Sewald & Jakubke, 2015)

Implications for Nursing Care

Alternative medicine is important for all medical professionals. Peptides are considered as being a natural alternative to prescribed. Therefore, nurses and practitioners can benefit from considering the usage of peptides alongside traditional medicine to help promote healing. The understanding and continued research of this project will continue throughout the years and staying up-to-date on the best treatment options will only help enhance patient outcomes. For example, Tiara has many properties beneficial for inflammation, tissue remodeling, angiogenesis, wound healing, and repair.

There are still many avenues that need to be explored in regard to the usage of peptides. The need for research in traditional therapies will always continue, but the use of combination therapy could be a beneficial step. When considering care treated by peptide therapy, patients suffer from chronic wounds and have difficulty healing due to comorbidities, the usage of peptides could be a very interesting option to consider. Studies that have been completed have only shown positive results, therefore, there is definitely a place for peptide therapy. This could possibly be the future of medicine and with continued research may end up becoming a more popular option in the world of traditional medicine.

Conclusion

Peptide Therapy

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Thymosin Beta 4 (Tβ4)

Body Protective Compound (BPC) 157

What are peptides?

Pathophysiology

Underlying

Significance

- Peptides are the reason for many biomedical processes. (See Figure 1)
- Peptide inflammation communication includes between cells and receptors.
- Peptides are simply oligomers or polymers of amino acids.
- They are connected to peptide bonds between amino acids.
- A peptide is a protein when it contains over 100 amino acids.
- Peptide and proteins = encoded biochemistry.
- Highly specific functions are decided through genetics.

Study 3

• The human body contains over 100 peptides.
• Peptides are the reason for many biomedical processes. (See Figure 1)
• Synthetic peptides can be used as:
  - Cancer treatment drugs
  - Antibodies
  - Enzyme substrates
  - Enzyme inhibitors
- Due to limited availability of human immunodeficiency virus (HIV) and other viruses, the body is trying to understand the design of new, naturally occurring peptide structure.
- Example of a breakthrough for peptides is when an enzyme is introduced in the body.
- Tiara has many properties beneficial for inflammation, tissue remodeling, angiogenesis, wound healing, and repair.
- There are still many avenues that need to be explored in regard to the usage of peptides. The need for research in traditional therapies will always continue, but the use of combination therapy could be a beneficial step. When considering care treated by peptide therapy, patients suffer from chronic wounds and have difficulty healing due to comorbidities, the usage of peptides could be a very interesting option to consider. Studies that have been completed have only shown positive results, therefore, there is definitely a place for peptide therapy. This could possibly be the future of medicine and with continued research may end up becoming a more popular option in the world of traditional medicine.

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- Due to limited availability of human immunodeficiency virus (HIV) and other viruses, the body is trying to understand the design of new, naturally occurring peptide structure.
- Example of a breakthrough for peptides is when an enzyme is introduced in the body.
- Tiara has many properties beneficial for inflammation, tissue remodeling, angiogenesis, wound healing, and repair.
- There are still many avenues that need to be explored in regard to the usage of peptides. The need for research in traditional therapies will always continue, but the use of combination therapy could be a beneficial step. When considering care treated by peptide therapy, patients suffer from chronic wounds and have difficulty healing due to comorbidities, the usage of peptides could be a very interesting option to consider. Studies that have been completed have only shown positive results, therefore, there is definitely a place for peptide therapy. This could possibly be the future of medicine and with continued research may end up becoming a more popular option in the world of traditional medicine. Conclusion