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ISM I

29 January 2021

More Research into a New Aspect of Interventional Oncology: Ablation of Liver Tumors

Assessment 13 - Research

Date: 29 January 2021

Subject: Interventional Radiology

MLA 8 Citations:

Kovács, Attila, et al. "Critical Review of Multidisciplinary Non-Surgical Local Interventional Ablation Techniques in Primary or Secondary Liver Malignancies." Journal of Contemporary Brachytherapy, Termedia Publishing House, Dec. 2019, www.ncbi.nlm.nih.gov/pmc/articles/PMC6964346/.

Assessment:

This assessment was essentially following the track previously set at the start of the spring semester to research the interventional oncology field more in depth. This article focused on ablation techniques of liver tumors and described, in great detail, the procedures themselves, how they are performed, potential side effects, and the trends in each respective area. This assessment will be analyzing the information acquired from the article and applying it to current knowledge.

The first goal of this assessment was to analyze if the primary goal of advancing my knowledge in the interventional oncology field was accomplished. It can successfully be

acknowledged that the goal of acquiring nearly all of the desired knowledge from the article was accomplished. The first thing looked for in the article was any mentioned trends in the interventional radiology field. Some trends noticed included the facts that local non-surgical interventional percutaneous ablation is on the rise in popularity and usage, interventional oncology is being more frequently used to treat liver tumors, and that, in many procedures, the success rate is being improved with new innovations, technology, and techniques. Also, a familiar trend was acknowledged in the article that technology in this field is advancing. This fact has been noticed in many other articles about other fields and demonstrates that the interventional radiology field as a whole is advancing at a rapid pace, which is an exciting idea. These trends were extremely interesting to acknowledge and can be asked about in discussions with my mentor. Also, many questions were derived from this article, but that topic will be explored later in the assessment. Additionally, it is good to keep these trends in mind in order to make connections to other trends noticed in future research in order to get a better 'big picture' idea of the interventional radiology field. Another thing looked for in the article was how it changes my idea of interventional oncology as a whole. This article covered so many procedures in detail and connected them to interventional oncology, so it served the purpose of opening my eyes more to get a better idea of the wide range of techniques that interventional oncology covers. It was quite an interesting thing to see. Furthermore, lots of terminology was gained from this article, including liver percutaneous ablation and liver brachytherapy. This terminology can be useful to know when speaking with my mentor about this topic so that the discussions can go more in depth with the minimization of small interjections in the conversation to ask what a certain word means. Interjections like that would decrease the amount of efficiency and keep the

conversation surface level, which is the opposite of what is wanted. Thus, it is best to have a base knowledge of the information.

Another goal of this assessment was to analyze how this article affected my understanding of the topic. One disappointing thing in the article, which has never been seen before in previous research, was the fact that all the article had to say regarding economic aspects was that it was a complicated process. At the beginning of the article, it made it seem like the economic aspects would be explored in depth and I got excited since the topic of hospital administration is another topic of interest and it seemed like the article would go into that topic. However, that did not happen and this was thus the first somewhat disappointing moment of my ISM research this year. On the other hand, there were many interesting bits of information in the article. For example, it was learned that this type of procedure is much cheaper than traditional surgery, the ultimate goal of the innovations of the treatments is to expand the practice of treating tumors with ablation, and that ablation is just one of the many cancer treatments that patients get (in most cases). This information certainly caught my eye and the fact that it was interesting will allow it to stick to memory easier. Additionally, some of these facts can be discussed in future mentor visits to get an opinion on them that one cannot simply get from research. There were also many connections to previous knowledge made. For example, the familiar term of radiotherapy was mentioned frequently and that was the exact topic studied in the last assessment, and that previous knowledge proved helpful in better understanding this article. Another connection made was that Dr. Christine Chen had said in an informational interview that many procedures use similar techniques to achieve similar purposes. This was found to be true once again in this article, since many of the procedures used similar techniques. Lastly, many connections were made to high school biology and AP Chemistry since it discussed

some treatments that applied things like basic cell concepts and thermodynamics to the techniques used. There were also many questions that came up when assessing the article. To name a few, one was ‘how are interventional radiology and radiotherapy different?’ Another was ‘why is radiofrequency ablation considered the first in line technique?’ These questions were good to have come up since future research can be done to figure out the answers to these questions.

The last goal for this assessment was to think about if any of the information learned can be applied to the final product. For this article, there were potential applications to the final product. For example it discussed a needle-like device used in percutaneous ablation treatments. The final product is designed around things like needles and tubes, so that will be perfect to implement in the design. Another potential application was noticed from the bit of information from the article that discussed the use of catheters in interstitial interventional radiotherapy. Again, the final product is designed to implement procedures and techniques that use wires, tubes, and catheters, so that is a perfect idea to implement into the design. Additionally, it should be noted that many avenues for future research were seen throughout the article and discussed throughout this assessment. Those future research ideas will guide future research assessments and future side research. On a side note, as I read more about interventional oncology procedures, the excitement experienced from reading these articles confirms that this career field is well-suited for me and should be highly considered as a potential career path.

In conclusion, this research assessment pretty much accomplished all of the goals set for it. This assessment analyzed if the information desired to learn was acquired, how the information learned affects the current understanding of interventional oncology, and potential uses for the Final Product. Overall, this assessment was successful.

Notes:

Critical review of multidisciplinary non-surgical local interventional ablation techniques in primary or secondary liver malignancies