**Editorial comments:**

**Changes to be made by the Author(s):**

**1. Please take this opportunity to thoroughly proofread the manuscript to ensure that there are no spelling or grammar issues. The JoVE editor will not copy-edit your manuscript and any errors in the submitted revision may be present in the published version.**

We have gone through and proofread the spelling and grammar.

**2. Please verify the desired access type. The Author License Agreement states open access but Editorial Manager states standard access.**

We would like standard access.

**3. Please obtain explicit copyright permission to reuse any figures from a previous publication. Explicit permission can be expressed in the form of a letter from the editor or a link to the editorial policy that allows re-prints. Please upload this information as a .doc or .docx file to your Editorial Manager account. The Figure must be cited appropriately in the Figure Legend, i.e. “This figure has been modified from [citation].”**

We have emailed JVIR and formally requested the right to use the figure, their response is as follows:

“Please note that, as one of the Authors of this article, you retain the right to reuse portion or excerpts in a new work. You do not require formal permission to do so. For full details of your rights as a Journal Author, please visit: https://www.elsevier.com/about/our-business/policies/copyright”

**4. Please avoid the use of lists in the Abstract. Please maintain the paragraph format.**

Abstract has been rewritten to remove the list.

**5. For in-text formatting, corresponding reference numbers should appear as numbered superscripts after the appropriate statement(s).**

We have converted reference numbers to superscripts.

**6. Please include Table 1 as an editable xls/xlsx file.**We have decided to remove Table 1 as it provides little standalone information. Rather, we have walked through the process of building this table in the protocol.

**7. Please ensure that all text in the protocol section is written in the imperative tense as if telling someone how to do the technique (e.g., “Do this,” “Ensure that,” etc.). The actions should be described in the imperative tense in complete sentences wherever possible. Avoid usage of phrases such as “could be,” “should be,” and “would be” throughout the Protocol. Any text that cannot be written in the imperative tense may be added as a “Note.” However, notes should be concise and used sparingly. Please include all safety procedures and use of hoods, etc.**

We have revised the protocol to use the imperative mood. We have also reduced the use of text not in the imperative mode. Section 2 is almost entirely instructive now rather than descriptive.

**8. The Protocol should contain only action items that direct the reader to do something. Please move the discussion about the protocol to the Discussion.**

The commentary has been moved to the discussion section.

**9. Please add more details to your protocol steps. Please ensure you answer the “how” question, i.e., how is the step performed? Alternatively, add references to published material specifying how to perform the protocol action.**

We have updated the protocol to have step-by-step instructions regarding training and testing a model.

**10. Please ensure that all terminal commands are explicitly written out.**

We have written out terminal commands, provided code snippets, and provided an entire code file for generating features from images.

**11. Steps 2-5 do not have enough details to replicate. We need explicit user input commands in order to film: File | Save | etc. Can a visual/screenshot be provided? A specific protocol (with specific values and numbers) in a specific example would help greatly.**

We have updated these steps to have specific instructions.

**12. Please highlight 2.75 pages or less of the Protocol (including headings and spacing) that identifies the essential steps of the protocol for the video, i.e., the steps that should be visualized to tell the most cohesive story of the Protocol. Remember that non-highlighted Protocol steps will remain in the manuscript, and therefore will still be available to the reader.**

We have highlighted Steps 2.2.1, 2.2.2, 3.6.1, 3.6.2, 3.7.2, 4.2.1, 4.2.2, and Step 5 in it entirety.

**13. Please ensure that the highlighted steps form a cohesive narrative with a logical flow from one highlighted step to the next. Please highlight complete sentences (not parts of sentences). Please ensure that the highlighted part of the step includes at least one action that is written in imperative tense.**

**14. As we are a methods journal, please revise the Discussion to explicitly cover the following in detail in 3-6 paragraphs with citations:  
a) Critical steps within the protocol:**

We have noted the importance of choosing appropriate features.

**b) Any modifications and troubleshooting of the technique**.

We have noted that an segmentation software may be used in lieu of itk-SNAP.

**c) Any limitations of the technique**We have noted that the method requires feature selection and that deep learning is likely a better approach, but requires more data.

**d) The significance with respect to existing methods**We have noted that existing methods only consider a few number of features and/or are constrained to include only-imaging or only-clinic data.

**e) Any future applications of the technique**We have noted that the method is extensible beyond interventional radiology as it may be applied to any treatment modality with pre- and post- intervention clinical and imaging features.

**15. Please do not abbreviate journal titles.**We have reviewed and eliminated our use of abbreviations.

**Reviewer #1:**

**Manuscript Summary:**

**The paper's is devoted to the very actual topic in medical machine learning (classifiers of responders/non-responders to certain treatment methods of cancer), but the overall presentation style of the current version of the manuscript fits more for a user's manual rather than a scientific paper. To improve the comprehensiveness of the papers, a major revision is needed.  
  
Major Concerns:**

**1. Lines 41-44. The short abstract is too short. It needs extension.**

Abstract has been extended while staying under the 50-word limit.

**2. Lines 119-152. Protocol: Workstation setup for machine learning. The style of this section resembles more a user's manual than a scientific report. Installation instructions seem redundant.**

The authors agree that this section is more instructional than novel or specific to the method. However, reproduction of methods is often highly dependent on equivalent software setups. The authors feel that some instruction should be provided on how to mirror the tool setup used for the novel results. In particular, explaining that Anaconda’s repositories should be use for package installation (in the Installation Instructions section) can avoid end-user headaches related to software dependences.

**All actions should be describe in past indicative rather than imperative mood.**

The expected mood of the article is imperative, as confirmed by the Editor.

**3. Lines 161-205. Feature extraction for case histories and DICOM images. Requires a flowchart/diagram.**Flowchart added.

**4. Lines 235-263. Requires a flowchart/diagram, along with a code sample.**

Flowchart added and we have provided a Python script for extracting imaging features.

**5. Lines 265-296. Results section. Please provide model figures on model training/validation results (e.g., correlation plots for fitted/trained and LOO-validated results etc.). Please also extend figure legends and their description in the main text. Please provide principal data used for machine learning as Supplementary materials, since this is more methodical paper than a result analysis one.**Figure 1 is the primary result graph illustrating the performance of the LOO-validated models in aggregate. We do not provide the performance of each individual model, which would merely consist of 36 accuracies validated only against one patient. We can provide this if strongly desired. We have written out individual instructions (Step 5.2.1, 5.2.2, and 5.3) that document how the reader may obtain the individual accuracies of each LOO model.

Regarding supplemental materials, we have now provided extensive code demonstrating how to complete Step 4 and Step 5.

**Reviewer #2:**

**Manuscript Summary:**

**Excellent innovative idea in using standard criteria (including imaging and clinical information) to predict patient response and ultimately survival. Great start into mostly unchartered territory in IR.  
Overall the manuscript is concise and your methods are easy to follow even for someone not experienced in programming language.**  
**Major Concerns:**

**1. Your focus on the article is clearly defined in using machine learning as a tool to initially predict a response to intra-arterial therapy, and the bulk of the article is focused on the IT protocol and programming language. However, you need a bit more background to say way in your introduction as this applies specifically to your hypothesis. mRECIST (or qEASL) and other predictors exist AFTER treatment to predict response. Make a little more of a case here for why this matters initially for IA therapy. A paragraph about IA therapy in IR and why it is so variable to begin with might be helpful in addition to your examples of use in oncology, using the MELD, etc.**

We have expanded the first paragraph of the discussion to include detail about qEASL as a post-treatment response criteria.