Data S1, source code for analyses.
Related to Figures 1 to 6.

Each piece of source code is provided in a folder containing the code as a Mathematica Notebook (.nb filetype), all source data required by the code, and a PDF printout of the Mathematica Notebook that presents both the code and its output for convenience of reading. With any source data kept within the same folder as the code, the Mathematica Notebook can be executed in Wolfram Mathematica version 11 by selecting 'Evaluate Notebook' from the 'Evaluation' menu.

Index for source code in Data S1:

Figure	Source code file
Digital image processing of human clinical trials is demonstrated in	Figure 1BC code.nb
Figure 1A	Figure 1A code.nb
Figure 1B and 1C	Figure 1BC code.nb
Figure 2 (all panels)	PDX analysis code.nb
Figure 3 (all panels)	PDX analysis code.nb
Figure 4 (all panels)	Figure 4, clinical trials analysis code.nb
Figure 5A, B, C	PDX analysis code.nb
Figure 5D	Figure 4, clinical trials analysis code.nb General-purpose code for prediction of drug combination effects from clinical data of individual therapies is provided in Prediction from monotherapy trials code.nb
Figure 6A	This figure is a schematic and not data; code is not available.
Figure 6B, C, D, E, F	Figure 6 model code.nb
Figure S1	This figure is an illustration of the procedure conducted in the following files: Figure 1A code.nb, Figure 1BC code.nb, Figure 4, clinical trials analysis code.nb, and the general-purpose code in Prediction from monotherapy trials code.nb
Figure S2 (all panels)	Figure 4, clinical trials analysis code.nb
Figure S3 (all panels)	PDX analysis code.nb
Figure S4 (all panels)	PDX analysis code.nb
Figure S5A	Figure 1BC code.nb , and Figure 4, clinical trials analysis code.nb
Figure S5B	Figure was produced by a variant of Figure 4, clinical trials analysis code.nb, using data provided in accompanying file Table of survival distributions.xlsx
Figure S6 (all panels)	PDX analysis code.nb
Figure S7A	Produced by ~20 variants of Figure 6 model code.nb. These simulations can be executed using the provided code by adjusting tumor kinetics parameters and drug resistance parameters to the values shown in Figure S7A.
Figure S7B, C	Figure 6 model code.nb

Contents of source code folders

Figure 1A code

Figure 1A code.nb	Code
Figure 1A code.pdf	PDF of code and its output
Figure 1A readme.txt	Instructions
LarkinCombinationVolumeChange.csv	Source data from Larkin *et al* (2015) NEJM
LarkinIpilimumabVolumeChange.csv	Source data from Larkin *et al* (2015) NEJM
LarkinNivolumabVolumeChange.csv	Source data from Larkin *et al* (2015) NEJM

Figure 1BC code

Figure 1BC code.nb	Code
Figure 1BC code.pdf	PDF of code and its output
Figure 1BC readme.txt	Instructions
Larkin combination.png	Source data from Larkin *et al* (2015) NEJM
Larkin ipilimumab.png	Source data from Larkin *et al* (2015) NEJM
Larkin nivolumab.png	Source data from Larkin *et al* (2015) NEJM

PDX code

PDX analysis code.nb	Code
PDX analysis code.pdf	PDF of code and its output
PDX analysis readme.txt	Instructions
PDX-CT curve metrics.xlsx	Source data from Gao *et al* (2015) Nat Med
Tumor types of models.csv	Source data from Gao *et al* (2015) Nat Med
Well covered models.csv	Source data from Gao *et al* (2015) Nat Med
Animal to animal consistency probability matrix.csv	Source data from Gao *et al* (2015) Nat Med

Figure 4 code

Figure 4, clinical trials analysis code.nb	Code
Figure 4, clinical trials analysis code.pdf	PDF of code and its output
Figure 4 readme.txt	Instructions
Table of survival distributions.xlsx	Source data from trials (citations within)

Figure 6 code

Figure 6 model code.nb	Code
Figure 6 model code.pdf	PDF of code and its output
Figure 6 model code readme.txt	Instructions

Predictions from monotherapy code

Prediction from monotherapy trials code.nb	Code
Prediction from monotherapy trials code.pdf	PDF of code and its output
Prediction readme.txt	Instructions
Paclitaxel_Carboplatin_events.csv	Example data
Olaparib_events.csv	Example data