Supplementary Online Content

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**eFigure 1.** The Replicated Kaplan-Meier PFS Curves of Atezolizumab Plus Bevacizumab and Sorafenib in the IMbrave150 Trial

**eFigure 2.** The Replicated Kaplan-Meier OS Curves of Atezolizumab Plus Bevacizumab and Sorafenib in the IMbrave150 Trial

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This supplementary material has been provided by the authors to give readers additional information about their work.
eFigure 1. The Replicated Kaplan-Meier PFS Curves of Atezolizumab Plus Bevacizumab and Sorafenib in the IMbrave150 Trial

The smooth lines indicated the survival curves predicting their corresponding best survival distributions.
eFigure 2. The Replicated Kaplan-Meier OS Curves of Atezolizumab Plus Bevacizumab and Sorafenib in the IMbrave150 Trial

The smooth lines indicated the survival curves predicting their corresponding best survival distributions.
The replicated Kaplan-Meier OS curves of Lenvatinib and Sorafenib in the Kudo and Colleague’s Trial

The smooth lines indicated the survival curves predicting their corresponding best survival distributions.
eFigure 4. Tornado Diagram of 1-Way Sensitivity Analyses of Atezolizumab Plus Bevacizumab Versus Sorafenib in Order of Magnitude of the Association

- HR of OS of Atezolizumab plus Bevacizumab versus Sorafenib: 0.42 to 0.79
- Cost of bevacizumab per 100mg: $420.3 to $840.5
- Cost of sorafenib per 200mg: $173.9 to $347.8
- Cost of atezolizumab per 1200mg: $4640.0 to $9280.0
- Body weight: 57.1 kg to 66.7 kg
- HR of PFS of Atezolizumab plus Bevacizumab versus Sorafenib: 0.47 to 0.76
- Proportion of receiving subsequent therapy in Sorafenib strategy: 83.7% to 50.2%
- Utility of progressed disease: 0.80% to 0.54%
- Cost of overall subsequent therapy per patient after disease progressed: $135420.0 to $81252.0
- Utility of progression–free disease: 0.91% to 0.61%
- Proportion of receiving subsequent therapy in Atezolizumab plus Bevacizumab strategy: 26.3% to 43.8%
- Cost of BSC per patient after disease progressed: $27813.0 to $46355.0
- Cost of administration: $223.4 to $372.3
- Cost of follow–up and monitoring per month in PFD: $590.5 to $984.2
- Cost of terminal care per patient: $9473.0 to $6315.0
- Cost of managing ADR related to hepatic toxicity per event: $1583.9 to $7118.8
- Cost of managing ADR related to thrombocytopenia per event: $1750.0 to $9579.0
- Probability of ADR grade 3–5 in Atezolizumab plus Bevacizumab strategy: 45.8% to 76.4%
- Probability of ADR grade 3–5 in Atezolizumab plus Sorafenib strategy: 76.1% to 45.7%

Cost data are presented in US dollars. ICUR (incremental cost-effective ratio) is calculated as the difference in cost divided by the difference in quality-adjusted life years (QALY) between the Atezolizumab plus Bevacizumab and Sorafenib strategies.

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eFigure 5. Subgroup Analysis of Incremental Net Health Benefits (INHB) and Probabilities of Cost-effectiveness by Varying the Hazard Ratios (HRs) of PFS

The vertical line indicates the point of no effect (INHB = 0), the red circle indicates the median INHB, and the green bar indicates the ranges of INHB adjusted by the HRs.
eTable 1. CHEERS Checklist

| Section                  | Item No | Recommendation                                                                 | Reported ? |
|--------------------------|---------|--------------------------------------------------------------------------------|------------|
| **Title and Abstract**   |         |                                                                                |            |
| Title                    | 1       | Identify the study as an economic evaluation or use more specific terms such as “cost-effectiveness analysis”, and describe the interventions compared. | ✓          |
| Abstract                 | 2       | Provide a structured summary of objectives, perspective, setting, methods (including study design and inputs), results (including base case and uncertainty analyses), and conclusions. | ✓          |
| **Introduction**         |         |                                                                                |            |
| Background and objectives| 3       | Provide an explicit statement of the broader context for the study. Present the study question and its relevance for health policy or practice decisions. | ✓          |
| **Methods**              |         |                                                                                |            |
| Target population and subgroups | 4   | Describe characteristics of the base case population and subgroups analysed, including why they were chosen. | ✓          |
| Setting and location     | 5       | State relevant aspects of the system(s) in which the decision(s) need(s) to be made. | ✓          |
| Study perspective       | 6 | Describe the perspective of the study and relate this to the costs being evaluated. |
|------------------------|---|----------------------------------------------------------------------------------|
| Comparators            | 7 | Describe the interventions or strategies being compared and state why they were chosen. |
| Time horizon           | 8 | State the time horizon(s) over which costs and consequences are being evaluated and say why appropriate. |
| Discount rate          | 9 | Report the choice of discount rate(s) used for costs and outcomes and say why appropriate. |
| Choice of health outcomes | 10 | Describe what outcomes were used as the measure(s) of benefit in the evaluation and their relevance for the type of analysis performed. |
| Measurement of effectiveness | 11a | Single study-based estimates: Describe fully the design features of the single effectiveness study and why the single study was a sufficient source of clinical effectiveness data. |
|                        | 11b | Synthesis-based estimates: Describe fully the methods used for identification of included studies and synthesis of clinical effectiveness data. |
| Measurement and valuation of preference based outcomes | 12 | If applicable, describe the population and methods used to elicit preferences for outcomes. |
| Estimating resources and costs | 13a | Single study-based economic evaluation: Describe approaches used to estimate resource use associated with the alternative interventions. Describe primary or secondary research methods for valuing each resource item in terms of its unit cost. Describe any adjustments made to approximate to opportunity costs. | NA |
| --- | --- | --- | --- |
| 13b | Model-based economic evaluation: Describe approaches and data sources used to estimate resource use associated with model health states. Describe primary or secondary research methods for valuing each resource item in terms of its unit cost. Describe any adjustments made to approximate to opportunity costs. | ✓ |
| Currency, price date, and conversion | 14 | Report the dates of the estimated resource quantities and unit costs. Describe methods for adjusting estimated unit costs to the year of reported costs if necessary. Describe methods for converting costs into a common currency base and the exchange rate. | ✓ |
| Choice of model | 15 | Describe and give reasons for the specific type of decision-analytical model used. Providing a figure to show model structure is strongly recommended. | ✓ |
| Assumptions | 16 | Describe all structural or other assumptions underpinning the decision-analytical model. | ✓ |
| Analytical methods | 17 | Describe all analytical methods supporting the evaluation. This could include methods for dealing with skewed, missing, or censored data; extrapolation methods; methods for pooling | ✓ |
| Results | Study parameters | 18 | Report the values, ranges, references, and, if used, probability distributions for all parameters. Report reasons or sources for distributions used to represent uncertainty where appropriate. Providing a table to show the input values is strongly recommended. |
| --- | --- | --- | --- |
| Incremental costs and outcomes | 19 | For each intervention, report mean values for the main categories of estimated costs and outcomes of interest, as well as mean differences between the comparator groups. If applicable, report incremental cost-effectiveness ratios. |
| Characterizing uncertainty | 20 a | Single study-based economic evaluation: Describe the effects of sampling uncertainty for the estimated incremental cost and incremental effectiveness parameters, together with the impact of methodological assumptions (such as discount rate, study perspective). |
|  | 20 b | Model-based economic evaluation: Describe the effects on the results of uncertainty for all input parameters, and uncertainty related to the structure of the model and assumptions. |
| Characterizing heterogeneity | 21 | If applicable, report differences in costs, outcomes, or cost-effectiveness that can be explained by variations between subgroups of patients with different baseline characteristics or other observed variability in effects that are not reducible by more information. | ✔ |
| Discussion | | Summarise key study findings and describe how they support the conclusions reached. Discuss limitations and the generalisability of the findings and how the findings fit with current knowledge. | ✔ |
| Study findings, limitations, generalizability, and current knowledge | 22 |
| Other | | Describe how the study was funded and the role of the funder in the identification, design, conduct, and reporting of the analysis. Describe other non-monetary sources of support. | ✔ |
| Source of funding | 23 |
| Conflicts of interest | 24 | Describe any potential for conflict of interest of study contributors in accordance with journal policy. In the absence of a journal policy, we recommend authors comply with International Committee of Medical Journal Editors recommendations. | ✔ |

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## eTable 2. Estimated Parameters and AIC Values From Each Survival Model

| Strategies       | Distributions | Parameters | PFS | OS |
|------------------|---------------|------------|-----|----|
|                  |               |            | est | L95%| U95%| se | AIC | est | L95%| U95%| se | AIC |
| Weibull          | shape         | 1.2555     | 1.1501 | 1.3704 | 0.0561 | 2775.10 | 1.3671 | 1.1386 | 1.6415 | 0.1276 | 645.16 |
|                  | scale         | 20.1901    | 18.5692 | 21.9625 | 0.8621 | 22.8177 | 18.5285 | 28.1028 | 2.4254 |
| Gamma            | shape         | 1.4723     | 1.2891 | 1.6815 | 0.0986 | 2768.85 | 1.5097 | 1.1925 | 1.9113 | 0.1817 | 844.28 |
|                  | rate          | 0.0776     | 0.0651 | 0.0926 | 0.0070 | 0.0672 | 0.0443 | 0.1020 | 0.0143 |
| Exp              | rate          | 0.0490     | 0.0441 | 0.0545 | 0.0026 | 2796.57 | 0.0323 | 0.0264 | 0.0394 | 0.0033 | 853.10 |
| Log-logistic     | shape         | 1.6930     | 1.5514 | 1.8475 | 0.0754 | 2759.36 | 1.5145 | 1.2655 | 1.8125 | 0.1388 | 643.38 |
|                  | scale         | 13.8408    | 12.5886 | 15.2175 | 0.6696 | 18.5869 | 15.1847 | 22.7504 | 1.9170 |
| Log-normal       | meanlog       | 2.6216     | 2.5227 | 2.7206 | 0.0505 | 2766.82 | 3.0426 | 2.8013 | 3.2839 | 0.1231 | 844.11 |
|                  | sdlog         | 1.0369     | 0.9593 | 1.1208 | 0.0412 | 1.2691 | 1.0807 | 1.4903 | 0.1041 |
| Gompertz         | shape         | 0.0161     | 0.0038 | 0.0284 | 0.0063 | 2792.22 | 0.0600 | 0.0403 | 0.1156 | 0.0284 | 850.77 |
|                  | rate          | 0.0410     | 0.0343 | 0.0490 | 0.0037 | 0.0232 | 0.0158 | 0.0341 | 0.0045 |
| Royston/Parmar spline model (0 knot) | gamma0 | -3.7728 | -4.1195 | 3.4261 | 0.1769 | 2775.10 | -4.2757 | -4.8886 | 3.6628 | 0.3127 | 845.16 |
|                  | gamma1        | 1.2554     | 1.1454 | 1.3654 | 0.0561 | 1.3671 | 1.1171 | 1.6172 | 0.1276 |
| Royston/Parmar spline model (1 knot) | gamma0 | 4.4832 | 5.0274 | -3.9391 | 0.2776 | 5.4727 | 5.3891 | 3.7563 | 0.4165 | 845.50 |
|                  | gamma1        | 2.4603     | 1.8178 | 3.1029 | 0.3278 | 2760.44 | 1.9805 | 0.9432 | 3.0178 | 0.5292 |
|                  | gamma2        | 0.0759     | 0.0732 | 0.1147 | 0.0196 | 0.0867 | 0.0529 | 0.2602 | 0.0722 |
| Royston/Parmar spline model (2 knot) | gamma0 | 4.4486 | 4.9899 | -3.9074 | 0.2762 | 4.6034 | 5.4045 | 3.8022 | 0.4088 |
|                  | gamma1        | 2.2368     | 1.2381 | 3.2356 | 0.5086 | 2762.29 | 1.5652 | 0.2825 | 2.8379 | 0.6519 |
|                  | gamma2        | -0.0348    | -0.2634 | 0.1937 | 0.1166 | -0.3031 | -1.0000 | 0.3937 | 0.3555 |
|                  | gamma3        | 0.1342     | 0.1606 | 0.4289 | 0.1504 | 0.5613 | 0.4766 | 1.5992 | 0.5296 |
| Sorafenib        | theta         | 0.1247     | 0.0717 | 0.2081 | NA | 0.5621 | 0.3979 | 0.7138 | NA |
|                  | shape         | 1.3998     | 1.2584 | 1.5571 | 0.0760 | 2769.66 | 1.6960 | 1.3323 | 2.1589 | 0.2088 | 843.64 |
|                  | scale         | 16.2332    | 14.2225 | 18.5822 | 1.0952 | 9.6355 | 6.5162 | 14.2480 | 1.9230 |
| Mixture cure model (Weibull) | theta | 0.1077 | 0.0552 | 0.1998 | NA | 0.4802 | 0.2458 | 0.7237 | NA |
|                  | shape         | 1.6888     | 1.4308 | 1.9933 | 0.1428 | 2764.92 | 1.9604 | 1.3181 | 2.7572 | 0.3589 | 844.14 |
|                  | rate          | 0.1092     | 0.0827 | 0.1442 | 0.0155 | 0.1736 | 0.0712 | 0.4231 | 0.0789 |
| Mixture cure model (Exp) | theta | 0.0001 | 0.0000 | 1.0000 | NA | 0.0007 | 0.0000 | 1.0000 | NA |
|                  | rate          | 0.0490     | 0.0441 | 0.0545 | 0.0026 | 0.0323 | 0.0264 | 0.0396 | 0.0034 |
| Mixture cure model (Log-logistic) | theta | 0.0031 | 0.0000 | 1.0000 | NA | 0.3763 | 0.1186 | 0.7335 | NA |
|                  | shape         | 1.6978     | 1.5386 | 1.8733 | 0.0852 | 2761.38 | 1.7579 | 1.3163 | 2.3477 | 0.2595 | 844.08 |
|                  | scale         | 13.7796    | 12.2441 | 15.5083 | 0.8308 | 11.0251 | 5.8470 | 20.7889 | 3.5677 |
| Mixture cure model (Log-normal) | theta | 0.0004 | 0.0000 | 1.0000 | NA | 0.0024 | 0.0000 | 1.0000 | NA |
|                  | meanlog       | 2.6210     | 2.5214 | 2.7207 | 0.0506 | 2768.84 | 3.0395 | 2.7646 | 3.3144 | 0.1403 | 846.12 |
|                  | sdlog         | 1.0367     | 0.9588 | 1.1208 | 0.0413 | 1.2680 | 1.0762 | 1.4942 | 0.1062 |
| Model Type                          | Parameter | Estimate | Standard Error | 95% Confidence Interval | z Value | Pr(>|z|) |
|------------------------------------|-----------|----------|----------------|-------------------------|---------|----------|
| Mixture cure model (Gompertz)      | theta     | 0.1331   | 0.0772         | 0.2196                  | NA      | 0.6198   |
|                                    | shape     | 0.0406   | 0.0202         | 0.0611                  | 0.0104  | 2.7897   |
|                                    | rate      | 0.0423   | 0.0351         | 0.0511                  | 0.0041  | 0.0414   |
| Non-mixture cure model (Weibull)   | theta     | 0.0974   | 0.0409         | 0.2143                  | NA      | 0.5432   |
|                                    | shape     | 1.5157   | 1.3484         | 1.7036                  | 0.0904  | 2.7655   |
|                                    | scale     | 28.0300  | 19.4237        | 40.4495                 | 5.2454  | 11.3519  |
| Non-mixture cure model (Gamma)     | theta     | 0.0750   | 0.0266         | 0.1942                  | NA      | 0.4410   |
|                                    | shape     | 1.6893   | 1.4339         | 2.0139                  | 0.1473  | 2.7635   |
|                                    | rate      | 0.0562   | 0.0320         | 0.0988                  | 0.0162  | 0.1285   |
| Non-mixture cure model (Exp)       | theta     | 0.0000   | 0.0000         | 1.0000                  | NA      | 0.0000   |
|                                    | rate      | 0.0010   | 0.0002         | 0.0048                  | 0.0008  | 0.0018   |
| Non-mixture cure model (Log-logistic) | theta                            | 0.0000   | 0.0000         | 0.9900                  | NA      | 0.0010   |
|                                    | shape     | 1.6042   | 1.3963         | 1.8429                  | 0.1136  | 2.7635   |
|                                    | scale     | 30.3637  | 19.0768        | 48.3285                 | 7.2003  | 14.1656  |
| Non-mixture cure model (Log-normal) | theta                            | 0.0000   | 0.0000         | 1.0000                  | NA      | 0.0000   |
|                                    | shape     | 5.0858   | 3.1088         | 7.0628                  | 1.0087  | 2.7626   |
|                                    | rate      | 1.6321   | 1.0267         | 2.2072                  | 0.2514  | 1.7375   |
| Non-mixture cure model (Gompertz)  | theta     | 0.1338   | 0.0776         | 0.2209                  | NA      | 0.6193   |
|                                    | shape     | 0.0863   | 0.0404         | 0.0857                  | 0.0116  | 0.2308   |
|                                    | rate      | 0.0174   | 0.0133         | 0.0228                  | 0.0024  | 0.0321   |
| Weibull                            | shape     | 1.2136   | 1.1131         | 1.3297                  | 0.0537  | 2.7338   |
|                                    | scale     | 18.9127  | 17.3445        | 20.6227                 | 8.8352  | 16.2507  |
| Gamma                              | shape     | 1.4436   | 1.2641         | 1.6491                  | 0.0979  | 2.7238   |
|                                    | scale     | 0.0813   | 0.0682         | 0.0971                  | 0.0073  | 0.0897   |
| Exp                                | rate      | 0.0525   | 0.0473         | 0.0583                  | 0.0028  | 2.7486   |
| Log-logistic                       | shape     | 1.6866   | 1.5463         | 1.8394                  | 0.0747  | 2.6996   |
|                                    | scale     | 12.5778  | 11.4312        | 13.8394                 | 0.6134  | 12.3488  |
| Log-normal                         | shape     | 2.5401   | 2.4439         | 2.6363                  | 0.0491  | 2.6931   |
|                                    | scale     | 1.0093   | 0.9035         | 1.0912                  | 0.0402  | 1.2314   |
| Gompertz                           | shape     | 0.0059   | -0.0069        | 0.0187                  | 0.0065  | 0.2749   |
|                                    | rate      | 0.0494   | 0.0416         | 0.0587                  | 0.0043  | 0.0415   |
| Royston/Parmar spline model (0 knot) | gamma0          | -3.5684  | -3.8955        | -3.2413                 | 0.1669  | -3.5478  |
|                                    | gamma1    | 1.2138   | 1.1086         | 1.3190                  | 0.0537  | 1.2728   |
| Royston/Parmar spline model (1 knot) | gamma0          | -5.1767  | -5.7859        | -4.4492                 | 0.3410  | -3.8625  |
|                                    | gamma1    | 2.4528   | 2.0122         | 2.8933                  | 0.2248  | 2.6923   |
| Royston/Parmar spline model (2 knot) | gamma0          | -5.2768  | -6.1235        | -4.4301                 | 0.4320  | -3.8714  |
|                                    | gamma1    | 2.6445   | 1.9094         | 3.3797                  | 0.3751  | 1.8750   |

Atezolizumab plus bevaczumab
| Mixture cure model (Weibull) | gamma2 | 0.1633 | -0.1172 | 0.4437 | 0.1431 | -0.0644 | -0.7659 | 0.6371 | 0.3579 |
|----------------------------|--------|---------|---------|---------|---------|----------|----------|---------|---------|
| gamma3                     | -0.0131| -0.3252 | 0.2989  | 0.1592  | 0.1943  | -0.6946  | 1.0833   | 0.4535  |
| theta                      | 0.1717 | 0.1276  | 0.2271  | NA      | 0.2874  | 0.0460   | 0.7713   | NA      |
| shape                      | 1.4675 | 1.3310  | 1.6180  | 0.0731  | 2710.72 | 1.3891   | 1.0415   | 1.8527  | 2.0401 |
| scale                      | 13.5815| 12.2713 | 15.0316 | 0.7030  | 10.8445 | 5.1269   | 22.9387  | 4.1452  |
| Mixture cure model (Gamma) | theta  | 0.1631 | 0.1182  | 0.2207  | NA      | 0.2670  | 0.0389   | 0.7660  | NA      |
| shape                      | 1.9013 | 1.6207  | 2.2304  | 0.1549  | 2702.06 | 1.5995   | 1.0486   | 2.4439  | 0.3460 |
| rate                       | 0.1511 | 0.1197  | 0.1906  | 0.0179  | 0.1505  | 0.0489   | 0.4631   | 0.0863  |
| Mixture cure model (Exp)   | theta  | 0.0067 | 0.0000  | 1.0000  | NA      | 0.0006  | 0.0000   | 1.0000  | NA      |
| rate                       | 0.0532 | 0.0425  | 0.0667  | 0.0061  | 0.0526  | 0.0411   | 0.0672   | 0.0066  |
| Mixture cure model (Log-logistic) | theta | 0.0872 | 0.0374 | 0.1903 | NA | 0.1425 | 0.0014 | 0.9520 | NA |
| shape                      | 1.8660 | 1.6520 | 2.1079 | 0.1160 | 2697.27 | 1.5618 | 1.0951 | 2.2274 | 0.2829 |
| Meanlog                    | 2.4289 | 2.2573 | 2.6005 | 0.0876 | 2693.64 | 2.5555 | 2.2813 | 2.8289 | 0.1399 |
| SDlog                      | 0.9413 | 0.8317 | 1.0653 | 0.0594 | 1.2310 | 1.0182 | 1.4882 | 0.1192 |
| Mixture cure model (Log-normal) | theta | 0.1720 | 0.1271 | 0.2286 | NA | 0.1605 | 0.0000 | 0.9996 | NA |
| shape                      | 0.0475 | 0.0287 | 0.0664 | 0.0096 | 2739.58 | 0.0623 | -0.1132 | 0.2379 | 0.0896 |
| Rate                       | 0.0501 | 0.0416 | 0.0602 | 0.0047 | 0.0485 | 0.0121 | 0.1953 | 0.0345 |
| Non-mixture cure model (Weibull) | theta | 0.1575 | 0.1088 | 0.2227 | NA | 0.2624 | 0.0280 | 0.8146 | NA |
| shape                      | 1.6171 | 1.4592 | 1.7922 | 0.0846 | 2703.99 | 1.4559 | 1.0605 | 1.9615 | 0.2215 |
| Scale                      | 19.9994| 16.4474| 24.3186| 1.9953 | 15.5044 | 3.9797 | 60.4035 | 10.7577 |
| Non-mixture cure model (Gamma) | theta | 0.1424 | 0.0930 | 0.2119 | NA | 0.2396 | 0.0258 | 0.7894 | NA |
| shape                      | 1.9556 | 1.6662 | 2.2953 | 0.1598 | 2698.65 | 1.6193 | 1.0558 | 2.4834 | 0.3533 |
| rate                       | 0.0984 | 0.0682 | 0.1418 | 0.0184 | 0.1001 | 0.0177 | 0.5676 | 0.0886 |
| Non-mixture cure model (Exp) | theta | 0.0000 | 0.0000 | 1.0000 | NA | 0.0000 | 0.0000 | 1.0000 | NA |
| rate                       | 0.0014 | 0.0002 | 0.0092 | 0.0014 | 0.0022 | 0.0001 | 0.0664 | 0.0038 |
| Non-mixture cure model (Log-logistic) | theta | 0.1048 | 0.0592 | 0.1788 | NA | 0.1850 | 0.0126 | 0.8013 | NA |
| shape                      | 1.7875 | 1.5747 | 2.0291 | 0.1156 | 2699.35 | 1.5504 | 1.0840 | 2.2176 | 0.2831 |
| Scale                      | 19.2839| 14.7142| 25.2727| 2.6610 | 15.9799 | 3.6614 | 89.6900 | 12.0059 |
| Non-mixture cure model (Log-normal) | theta | 0.0444 | 0.0102 | 0.1732 | NA | 0.0023 | 0.0000 | 1.0000 | NA |
| Meanlog                    | 3.9399 | 2.8031 | 3.9847 | 0.3014 | 2693.41 | 4.5780 | -0.9138 | 10.0697 | 2.8019 |
| SDlog                      | 1.1619 | 0.9635 | 1.4011 | 0.1110 | 1.6924 | 0.7639 | 3.6540 | 0.6646 |
| Non-mixture cure model (Gompertz) | theta | 0.1701 | 0.1260 | 0.2258 | NA | 0.2190 | 0.0019 | 0.9763 | NA |
| shape                      | 0.0728 | 0.0530 | 0.0926 | 0.0101 | 2737.36 | 0.0840 | -0.0748 | 0.2628 | 0.0861 |
| Rate                       | 0.0223 | 0.0178 | 0.0280 | 0.0026 | 0.0260 | 0.0023 | 0.2923 | 0.0321 |

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eTable 3. Probability and Costs Related to Adverse Events (Grade ≥3)

| Parameters                                      | Expected value | Range     | Distribution        | Reference |
|-------------------------------------------------|----------------|-----------|---------------------|-----------|
| **Probabilities in sorafenib arm**              |                |           |                     | (5)       |
| Diarrhea                                        | 0.05           | 0.42 - 0.79 | Beta: α= 0.3, β= 5.2 |           |
| Palmar-plantar erythrodysesthesia syndrome      | 0.08           | 0.06 - 0.10 | Beta: α= 14.7, β= 162.1 |       |
| Fatigue                                         | 0.03           | 0.02 - 0.04 | Beta: α= 15.5, β= 468.5 |       |
| Nausea                                          | 0.01           | 0.00 - 0.01 | Beta: α= 15.9, β= 2634.8 |       |
| Hypertension                                    | 0.12           | 0.09 - 0.15 | Beta: α= 14, β= 101.1 |           |
| Thrombocytopenia                                | 0.01           | 0.01 - 0.02 | Beta: α= 15.8, β= 1199 |           |
| Hepatotoxicity                                  | 0.06           | 0.05 - 0.08 | Beta: α= 15, β= 219  |           |
| Proteinuria                                     | 0.01           | 0.00 - 0.01 | Beta: α= 15.9, β= 2634.8 |       |
| **Probabilities in atezolizumab plus bevacizumab arm** |                |           |                     | (5)       |
| Diarrhea                                        | 0.02           | 0.01 - 0.02 | Beta: α= 15.7, β= 857.2 |       |
| Palmar-plantar erythrodysesthesia syndrome      | 0.00           | 0.00 - 0.00 | Beta: α= 0, β= 0    |           |
| Fatigue                                         | 0.02           | 0.02 - 0.03 | Beta: α= 15.6, β= 635.1 |       |
| Nausea                                          | 0.00           | 0.00 - 0.00 | Beta: α= 16, β= 5301.4 |       |
| Hypertension                                    | 0.15           | 0.11 - 0.19 | Beta: α= 13.6, β= 75.7 |           |
| Thrombocytopenia                                | 0.03           | 0.02 - 0.04 | Beta: α= 15.5, β= 453.4 |       |
| Hepatotoxicity                                  | 0.11           | 0.08 - 0.13 | Beta: α= 14.3, β= 120.6 |       |
| Proteinuria                                     | 0.03           | 0.02 - 0.04 | Beta: α= 15.5, β= 501.8 |       |
| **Costs per event**                             |                |           |                     |           |
| Diarrhea                                        | 3,802          | 2,851 - 4,752 | Gamma: α= 15206, λ= 0.25 | (13)     |
| Palmar-plantar erythrodysesthesia syndrome      | 987            | 741 - 1,234  | Gamma: α= 3949, λ= 0.25 | (13)     |
| Fatigue                                         | 249            | 187 - 311    | Gamma: α= 996, λ= 0.25 | (13)     |
| Nausea                                          | 2,638          | 1,978 - 3,297 | Gamma: α= 10551, λ= 0.25 | (13)     |
| Hypertension                                    | 1,701          | 1,276 - 2,127 | Gamma: α= 6805, λ= 0.25 | (13)     |
| Thrombocytopenia                                | 4,094          | 1,750 - 9,579 | Gamma: α= 8390, λ= 0.488 | (12)     |
| Hepatotoxicity                                  | 2,773          | -1,584 - 7,119 | Gamma: α= 3461, λ= 0.801 | (15)     |
| Proteinuria                                     | 1,728          | 97 - 3,565   | Gamma: α= 3376, λ= 0.512 | (15)     |