

## Supplemental Digital Content 6 – Overall survival benchmark

Constructing the historical control overall survival distribution for a phase II trial

The historical control curve is given by:

$$\bar{S}(t) = \frac{1}{n} \sum_{i=1}^n S_i(t)$$

where

$$S_i(t) = [S_0(t)]^{\exp(SUM_i)}$$

$S_0(t)$  is given in the Supplementary Excel File, Supplemental Digital Content 7, based on 78 articles, 2494 patients.

$n$  is number of the patients in the phase II trial.

At the time of analysis of the new phase II trial, the survival curve of this trial based on  $n$  patients is compared with the historical survival curve [1]. Somewhat arbitrarily the endpoint was chosen to be one year. As suggested by Korn *et al.* [1] if  $P$ -value is less than 0.01, the new drug can be pursued further.

## References

- 1 Korn EL, Liu P-Y, Lee SJ, Chapman J-AW, Niedzwiecki D, Suman VJ, *et al.* Meta-analysis of phase II cooperative group trials in metastatic stage IV melanoma to determine progression-free and overall survival benchmarks for future phase II trials. *J Clin Oncol* 2008; **26**:527-534.