# The REMARK checklist

| Item to be reported | Reported on Page Number & Line Number | Reported on Section & Paragraph |
|---------------------|---------------------------------------|---------------------------------|
| **INTRODUCTION**    |                                       |                                 |
| 1 State the marker examined, the study objectives, and any pre-specified hypotheses. | Page 4, Line 70-74 | Introduction Paragraph 3 |
| **MATERIALS AND METHODS** |                                       |                                 |
| Patients            |                                       |                                 |
| 2 Describe the characteristics (e.g., disease stage or co-morbidities) of the study patients, including their source and inclusion and exclusion criteria. | Page 5, Line 78-85 | Patients and Methods Paragraph 1 |
| 3 Describe treatments received and how chosen (e.g., randomized or rule-based). | Page 5, Line 78-85 | Patients and Methods Paragraph 1 |
| Specimen characteristics |                                       |                                 |
| 4 Describe type of biological material used (including control samples) and methods of preservation and storage. | Page 5, Line 89-115 | Patients and Methods Paragraph 1 |
| Assay methods       |                                       |                                 |
| 5 Specify the assay method used and provide (or reference) a detailed protocol, including specific reagents or kits used, quality control procedures, reproducibility assessments, quantitation methods, and scoring and reporting protocols. Specify whether and how assays were performed blinded to the study endpoint. | Page 5, Line 89-115 | Patients and Methods Paragraph 2-3 |
| Study design        |                                       |                                 |
| 6 State the method of case selection, including whether prospective or retrospective and whether stratification or matching (e.g., by stage of disease or age) was used. Specify the time period from which cases were taken, the end of the follow-up period, and the median follow-up time. | Page 5, Line 78-87 Page 9 153-155 | Patients and Methods Results Paragraph 2 |
| 7 Precisely define all clinical endpoints examined. | Page 9 153-155 | Results Paragraph 2 |
| 8 List all candidate variables initially examined or considered for inclusion in models. | Page 5, Line 78-85 | Patients and Methods Paragraph 1 |
| 9 Give rationale for sample size; if the study was designed to detect a specified effect size, give the target power and effect size. | N/A, Because this is a N/A, Because this is a |
| Statistical analysis methods |                                       |                                 |
| 10 Specify all statistical methods, including details of any variable selection procedures and other model-building issues, how model assumptions were verified, and how missing data were handled. | Page 7, Line 126-130 | Patients and Methods Paragraph 5 |
| 11 Clarify how marker values were handled in the analyses; if relevant, describe methods used for cutpoint determination. | Page 7, Line 116-123 | Patients and Methods Paragraph 5 |
**RESULTS**

|   |   |   |
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| 12 | **Data** |   |
| Describe the flow of patients through the study, including the number of patients included in each stage of the analysis (a diagram may be helpful) and reasons for dropout. Specifically, both overall and for each subgroup extensively examined report the numbers of patients and the number of events. | N/A, because this is a pilot study, there is a small number of cases. | N/A, because this is a pilot study, there is a small number of cases. |
| 13 | Report distributions of basic demographic characteristics (at least age and sex), standard (disease-specific) prognostic variables, and tumor marker, including numbers of missing values. | Page 5, Line 81-84 | Patients and Methods Paragraph 1 |

**Analysis and presentation**

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|---|---|---|
| 14 | **Show the relation of the marker to standard prognostic variables.** | Page 9, Line 157-167 | Results Paragraph 2 |
| 15 | **Present univariable analyses showing the relation between the marker and outcome, with the estimated effect (e.g., hazard ratio and survival probability). Preferably provide similar analyses for all other variables being analyzed.** For the effect of a tumor marker on a time-to-event outcome, a Kaplan-Meier plot is recommended. | Page 9, Line 157-167 | Results Paragraph 2 |
| 16 | **For key multivariable analyses, report estimated effects (e.g., hazard ratio) with confidence intervals for the marker and, at least for the final model, all other variables in the model.** | N/A, Because this is a pilot study, there was no model | N/A, Because this is a pilot study, there was no model |
| 17 | **Among reported results, provide estimated effects with confidence intervals from an analysis in which the marker and standard prognostic variables are included, regardless of their statistical significance.** | N/A, Because this is a pilot study, we did not run a model | N/A, Because this is a pilot study, we did not run a model |
| 18 | **If done, report results of further investigations, such as checking assumptions, sensitivity analyses, and internal validation.** | N/A, Because this is a pilot study, we did not run a model | N/A, Because this is a pilot study, we did not run a model |

**DISCUSSION**

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|---|---|---|
| 19 | **Interpret the results in the context of the pre-specified hypotheses and other relevant studies; include a discussion of limitations of the study.** | Page 10, Line 178-190 | Discussion Paragraph 1-2 |
| 20 | **Discuss implications for future research and clinical value.** | Page 10, Line 191-197 | Discussion Paragraph 2 |

*From: McShane LM, Altman DG, Sauerbrei W, Taube SE, Gion M, Clark GM: Reporting recommendations for tumor marker prognostic studies (REMARK). J Natl Cancer Inst 2005; 97: 1180-1184.*

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*As the checklist was provided upon initial submission, the page number/line number reported may be changed due to copyediting and may not be referable in the published version. In this case, the section/paragraph may be used as an alternative reference.*