**Supplementary Table 1.** Breakdown of study population according to phenotype and number of mutations identified in the whole 135-gene panel.

|  |  |  |  |
| --- | --- | --- | --- |
| Phenotype | Patients | Pathogenic/likely pathogenic mutation | % |
| Hereditary breast-ovarian cancer syndrome | 633 | 132 | 20.85 |
| Hereditary nonpolyposis colorectal cancer | 210 | 63 | 30.00 |
| (Attenuated) Familial adenomatous polyposis | 77 | 9 | 11.69 |
| Li-Fraumeni syndrome | 15 | 3 | 20.00 |
| Other | 88 | 20 | 22.73 |
| TOTAL | 1023 | 227 | 22.19 |

**Supplementary Table 2.** Published cancer risk for the genes mutated in our cohort of MINAS patients

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Cancer risk | Associated risk | Cancer risk / age |
| *APC* | Colorectal cancer | Very high | <50 years: 93%[1] |
| *ATM* | Female breast cancerPancreatic cancer | ModerateLow | >50 years:4.94%[2]Lifetime risk: 2.41%[2] |
| *BARD1* | Female breast cancer | Moderate\* [3], [4],[5] | NA |
| *BRCA1* | Female breast cancerOvarian cancerProstate cancerMale breast cancer | HighHighLowLow | <70 years: 60-66%[6], [7]<70 years: 41-59%[6], [7]<65 years: 8.6%[8]<70 years: 1.2%[9] |
| *CHEK2* | Female breast cancerProstate cancerColorectal cancer | ModerateModerateLow | <80 years: 23-48%[10], [11], [12], [13].Lifetime risk: 24-44%[14]Lifetime risk: 7.2-9.5%[15] |
| *ERCC3* | Breast Cancer | Moderate\* [16] | NA |
| *EXO1* | Female breast cancerLung cancerGliomaGastric cancer | Low\*[17]Low\*[17]Low\*[17]Low\*[17] | NANANANA |
| *FANCA* | Female breast cancer | Low\* [18], [19], [20] | NA |
| *FLCN* | Renal cancer Colorectal cancer | Moderate [21]Low\*[22] | Lifetime risk: 16% [21]NA |
| *FH* | Hereditary leiomyomatosis Renal cell carcinomaFemale breast cancer | High[23]Moderate[23] [24]Low[23] | NALifetime risk: 15% [24]NA |
| *MEN1* | Endocrine tumors | High[25] | NA |
| *MLH1* | Colorectal cancerEndometrial cancerUpper GI cancerOvarian cancerUrinary tract | HighHighModerateModerateLow | <70 years: 46%[26]<70 years: 34%[26]<70 years: 18%[26]<70 years: 11%[26]<70 years: 2%[26] |
| *PALB2* | Female breast cancerPancreatic cancer | HighLow [27], [28] | <70 years:35%[29]NA |
| *RAD51D* | Ovarian cancer | Moderate | <80 years: 10%[30] |
| *SDHB* | ParagangliomaPheochromocytoma | Moderate[31]Moderate[31] | 30 years: 29%[32]NA |
| *TP53* | Female breast cancerOverall cancer risk | HighVery High | <70 years: 54%[33]<70 years: ~100%[33] |
| *TSC2* | Hamartomas | High[34] | NA |
| *XPA* | Bladder cancerLung cancerBreast cancer | Low\*[35]Low\*[36]Low\*[37] | NA |

GI includes gastric, pancreatic biliary tract and duodenal cancers

\* More evidence needed

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