

SELINA – clinical trial on lowering the risk of malignancies by optimizing selenium levels in females from families with hereditary breast cancer*

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Aim. Prospective observational studies showed that blood selenium (Se) levels associated with significantly lower risk of cancers can be identified in Polish females from families with hereditary breast cancers (HBC). For BRCA1 mutation carriers it is: 70-89 µg/l at age <50 yrs (OR~12) and 95-120 µg/l at age ≥50 yrs (OR~4). For females without detected BRCA1 mutation but from families with pedigree/clinical features of HBC it is 98-108 µg/l (OR~5). The main goal of SELINA is validation of hypothesis that optimization of Se level by supplementation or diet changes can decrease the risk of malignancies in groups described above.

Method. 7000 females (including 1200 BRCA1 carriers) from families with HBC and deficiency or excess of Se will be recruited and randomly qualified to one of the following arms: “placebo”, prospective observational, supplement (Sodium Selenite) or diet modification. Blood Se level will be systematically measured using ICP-MS and appropriately optimized. Follow-up will take 5 yrs.

Results. At present we are performing recruitment. It is planned to close it at the end of 2018.

Conclusion. SELINA is the first clinical trial aimed to decrease the risk of cancers by active control of blood selenium levels . All interested scientists/institutions are welcome for collaboration.

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