



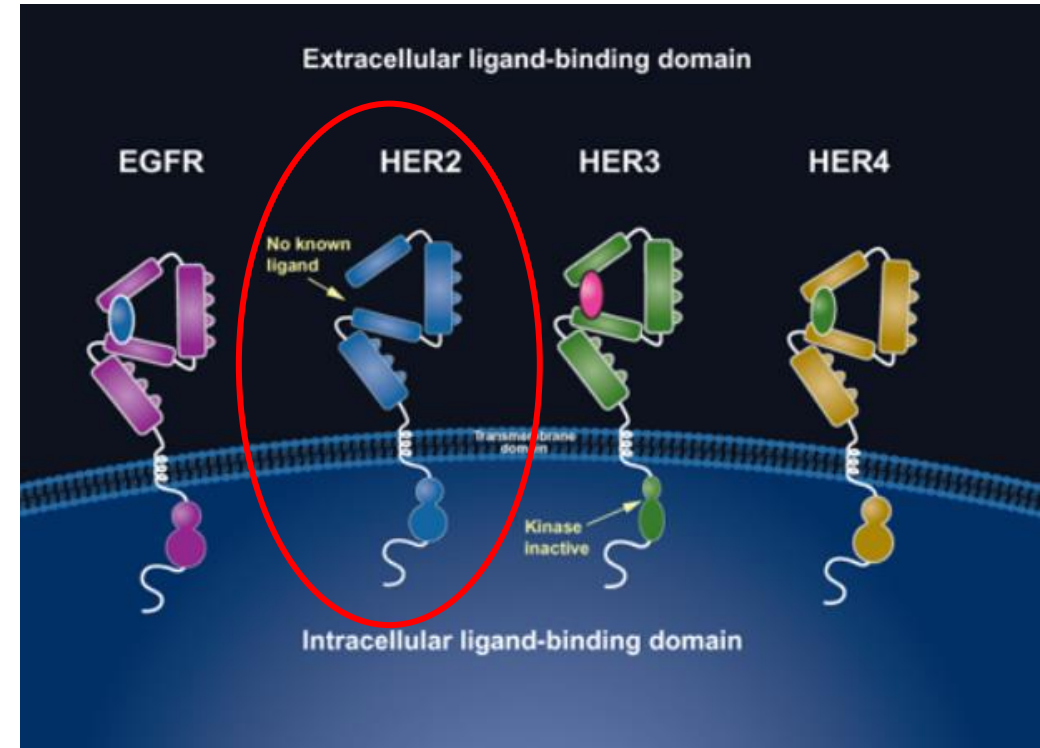
Circulating HER2/ErbB2 levels and incidence of diabetes: a population based cohort study

**Dr. Iram Faqir Muhammad
MD, MPH, Doctoral student
Cardiovascular Epidemiology
Lund University**

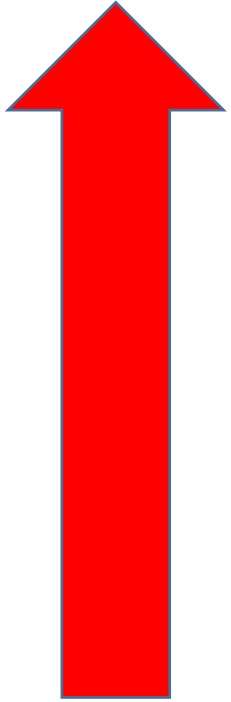
CDS 2019

ErbB2:

- A member of the tyrosine kinase receptor family
- Also known as HER2/neu
- Encoded by the proto oncogene HER2



HER2/ErbB2



Over expressed in 25-30% breast cancers

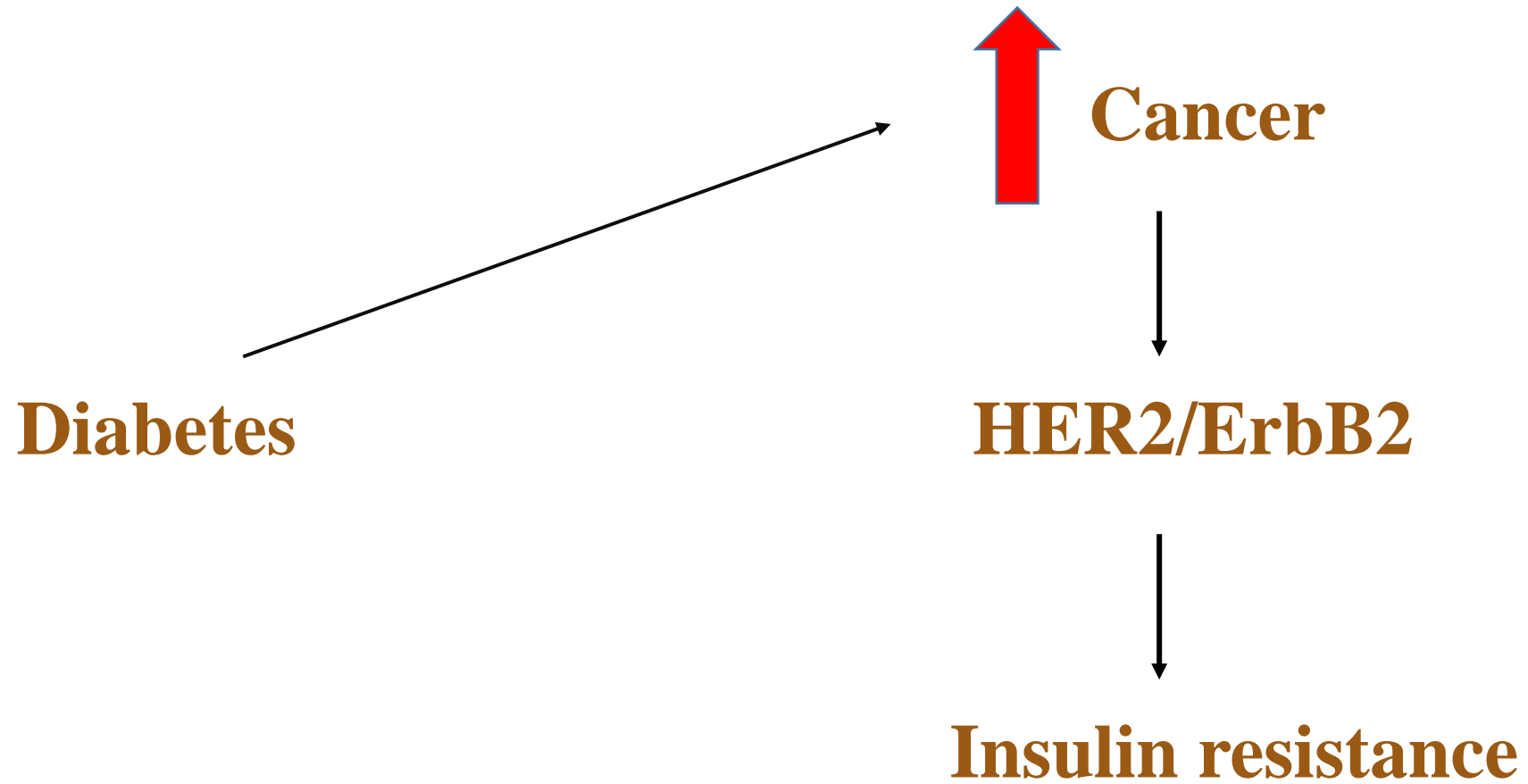
Ovarian cancer

Bladder cancer

Endometrial cancer

Pancreatic cancer

Non-small lung cancer



Aim:

To assess the association between incidence of diabetes and ErbB2 levels



Methods :



Table 1: Incidence of diabetes in relation to quartiles of *ErbB2*

	Q1	Q2	Q3	Q4	P for trend	HR per SD
Number of participants	1055	1055	1055	1055		
Incidence of diabetes n (per 1000 p-y)	111(4.91)	127(5.92)	145(6.86)	232(11.57)		
Model 1	1	1.08(0.84-1.40)	1.19(0.93-1.53)	1.72(1.36-2.18)***	<0.001	1.25(1.14-1.37)***
Model 2	1	1.09(0.85-1.41)	1.19(0.93-1.53)	1.73(1.37-2.19)***	<0.001	1.16(1.07-1.26)**
Model 3	1	0.93(0.72-1.20)	0.99(0.77-1.27)	1.31(1.03-1.66)*	0.006	1.15(1.05-1.25)**

Model 1: Adjusted for age, sex, waist circumference, smoking habits, low-density lipoprotein cholesterol, , systolic blood pressure, anti-hypertensive drug medication .

Model 2: Model 1 and CRP

Model 3: Model 2 and baseline fasting glucose

*p<0.05 **p<0.01 ***p<0.001

Per 1 SD refers to 1 SD of the log2 transformed value.

Table 2: Correlations between ErbB2 and measures of glucose metabolism

	Fasting glucose (baseline)	HbA1c	HOMA2IR (4176)	Insulin (4176)	Fasting glucose (re-exam) 2817	OGTT (Re-exam) 2637
Model 1	0.181***	0.157***	0.231***	0.225***	0.129 ***	0.056 **
Model 2	0.130 ***	0.127***	0.202***	0.195***	0.034	0.111 ***

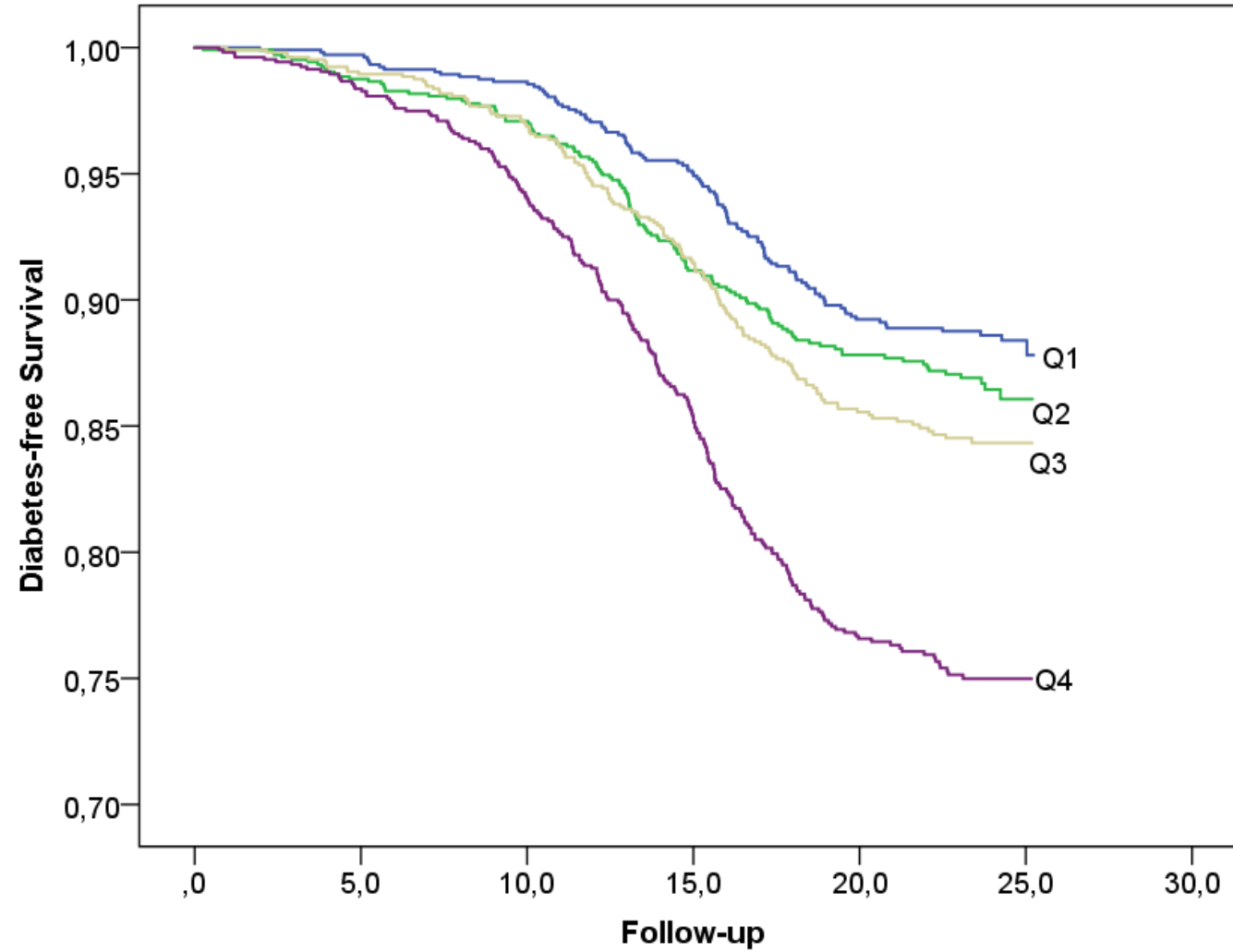
Values are standardized beta coefficients from multiple linear regressions with ERbb2 as the dependent variable.

Model 1: Adjusted for age and sex.

Model 2: Adjusted for age, sex, waist circumference, smoking habits, use of anti-hypertensive medication, systolic blood pressure, LDL, use of lipid lowering drugs and CRP.

*p<0.05, **p<0.01, ***p<0.001

Diabetes-free survival in relation to the quartiles of ErbB2:



Conclusion:

Elevated levels of ErbB2 are **positively associated** with increased incidence of diabetes, and are strongly **correlated** with measures of glucose metabolism.



LUND
UNIVERSITY

Acknowledgments:

Supervisors:

Prof. Gunnar Engström

Yan Borne

Contact:

iram.faqir_muhammad@med.lu.se