

Epidemiology of Diabetes and Cancer: Lessons learnt

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DCRC 10th session, Malmö, September 2019

Demography of Diabetes and Cancer

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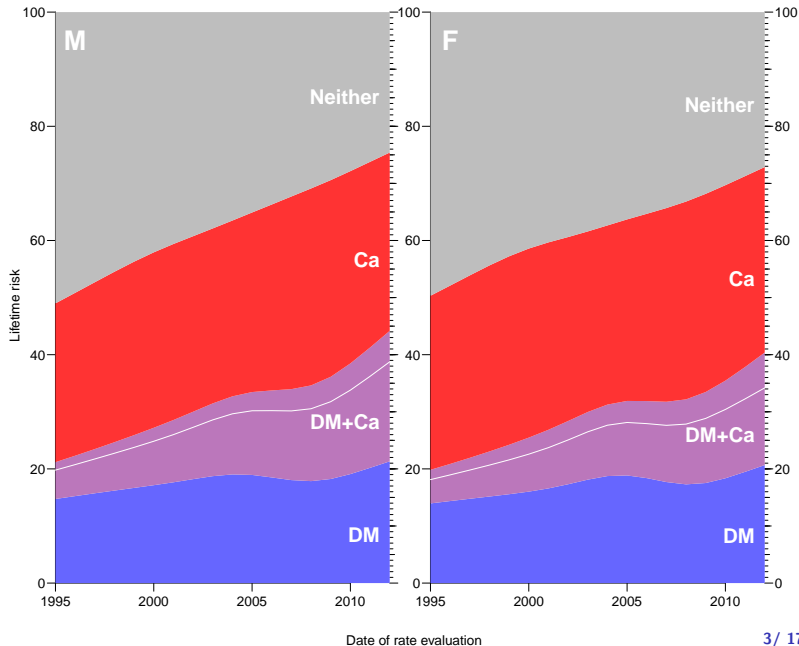
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- ▶ Life time risk of cancer
- ▶ Life time risk of both

Lifetime risk of Diabetes and Cancer in Denmark (2013):

DM: 42%
Ca: 53%
DM & Ca: 21%
Neither: 26%



Incidence rate ratio of cancer by site

Approximate figures based on
[1, 2, 3]

Except for Breast cancer these figures
are consistent across studies

Cancer site	IRR
Colorectal	1.2
Liver	2.0–4.0
Pancreas	2.0
Lung	1.1
Breast	1.0
Prostate	0.7–0.9
Corpus uteri	1.5
Kidney	1.5

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- ▶ is this reasonable
 - the effect of randomly assigning a diabetes diagnosis

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- ▶ **not** interpretable as randomized allocation of diabetes

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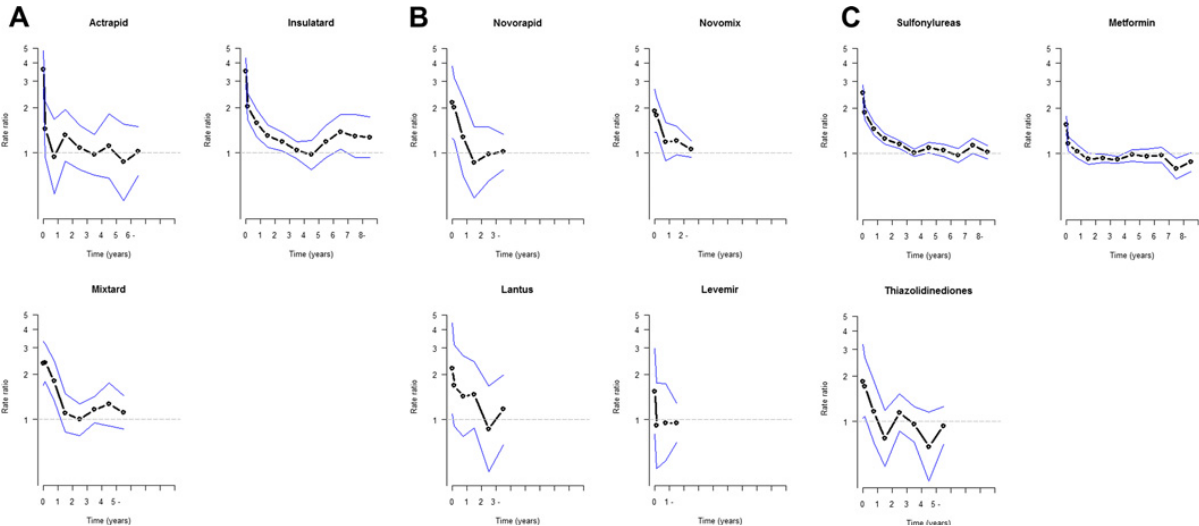
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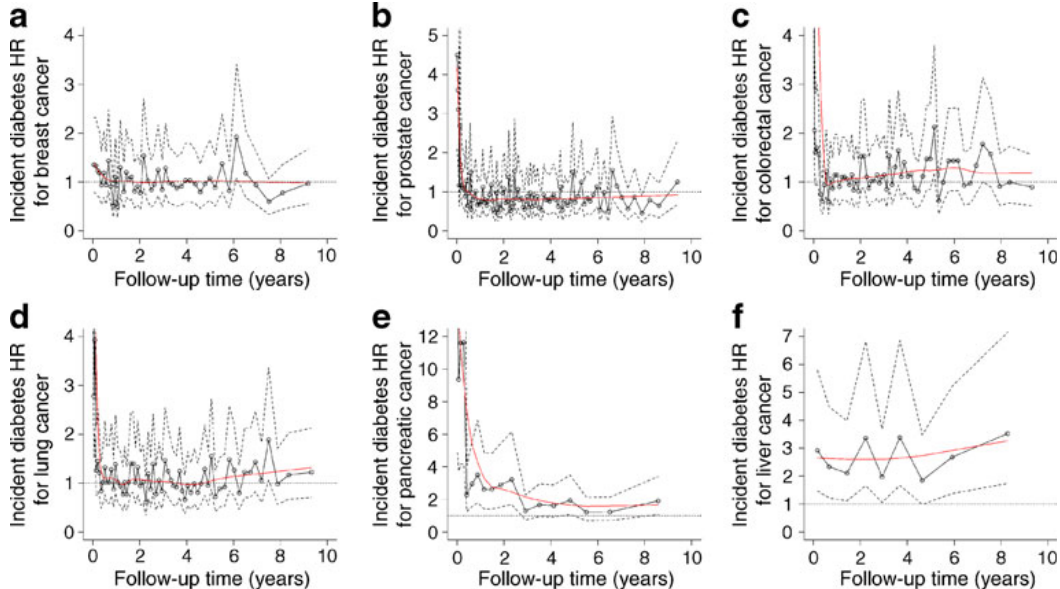
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- ▶ — mostly because we do not have access to the relevant confounders
- ▶ we see the **combination** of the drug indication and the “pure” drug effect.

IRR of all cancers, Denmark — time since drug [4]



IRR of cancers, Canada — time since diagnosis [5]



Epidemiology of Diabetes and Cancer: Lessons **not** learnt

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Terminology: “population based” and “register” misused

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- ▶ Some authors have produced long series of papers with one cancer at a time
- ▶ We need **comprehensive** analyses of cancer occurrence, see e.g. [2] with 14 main groups, 31 sub-groups of cancer

Epidemiology of Diabetes and Cancer: Lessons **to** learn

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- ▶ All relevant cancer groups
- ▶ overall incidence RR relative to non-DM population
- ▶ by calendar time
- ▶ by DM duration
- ▶ by drug duration if available

Suggestion

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- ▶ Publish **electronically**, with easily accessible tables and summary data sets (as computer-readable data sets) for further future comparisons

References

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Thanks for your attention