Mortality and causes of death among persons with alcohol use disorder only versus persons with opioid dependence: results from a 19-year prospective cohort study

Lisbon Addictions 2022, Lisbon 23–25 November 2022

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Funding: Innlandet Hospital Trust, Ottestad, Norway

Disclosures: None of the authors reported conflicts of interest

Background

- Substance use disorders (SUDs) are associated with increased mortality risk and metaanalyses show the highest risk among people with opioid use disorder while alcohol use disorder is the greatest public health problem due to it´s high prevalence

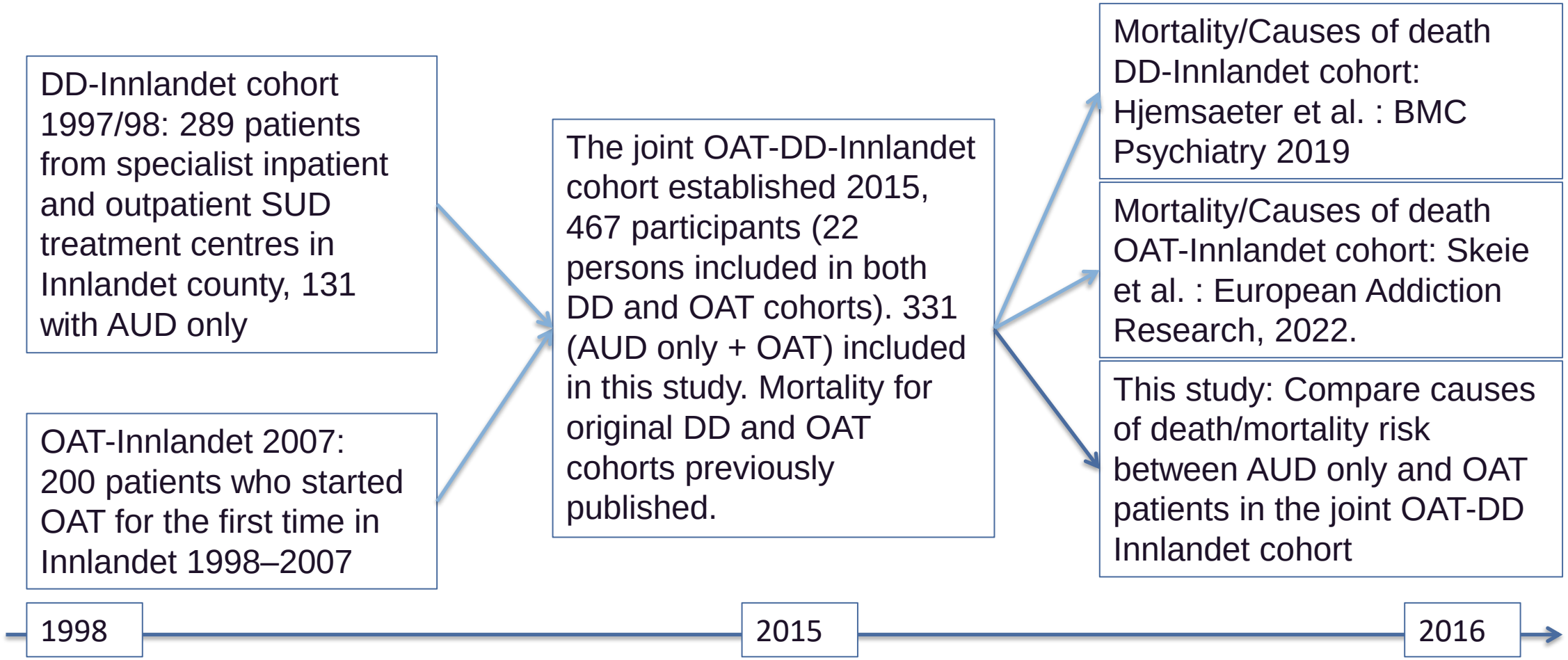
- Mortality in persons with alcohol use disorders (AUD) versus opioid use disorders (OUD) has seldom been thoroughly studied within the same cohort

- Such a comparative study was possible in this cohort

Aim

- To compare, within the same cohort, mortality risk adjusted for sex and chronological age between the alcohol use disorder and the opioid use disorder groups.

The OAT*/DD**-Innlandet*** cohort (1998–2016)



* Opioid Agonist Treatment

** ”Double Diagnosis” = Concurrent SUD and Mental Health Disorder

*** Innlandet county, Norway

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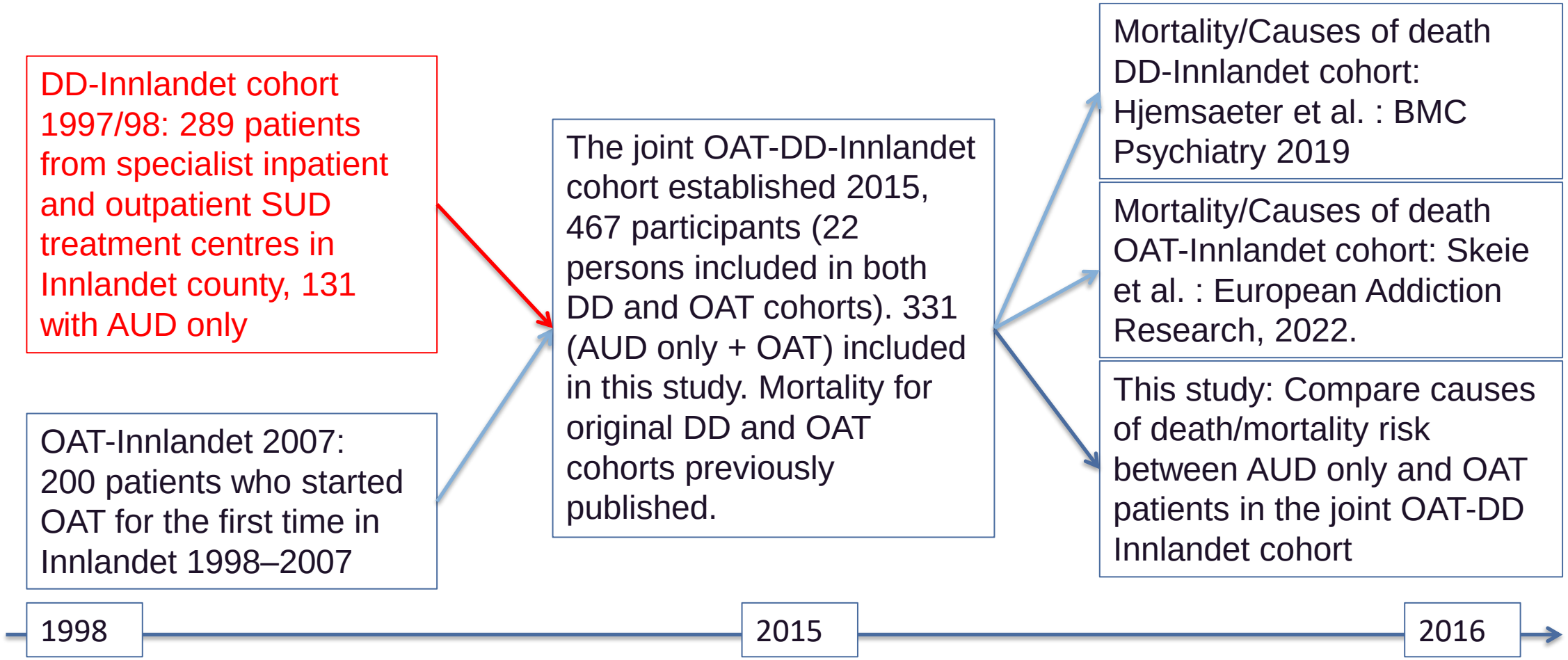

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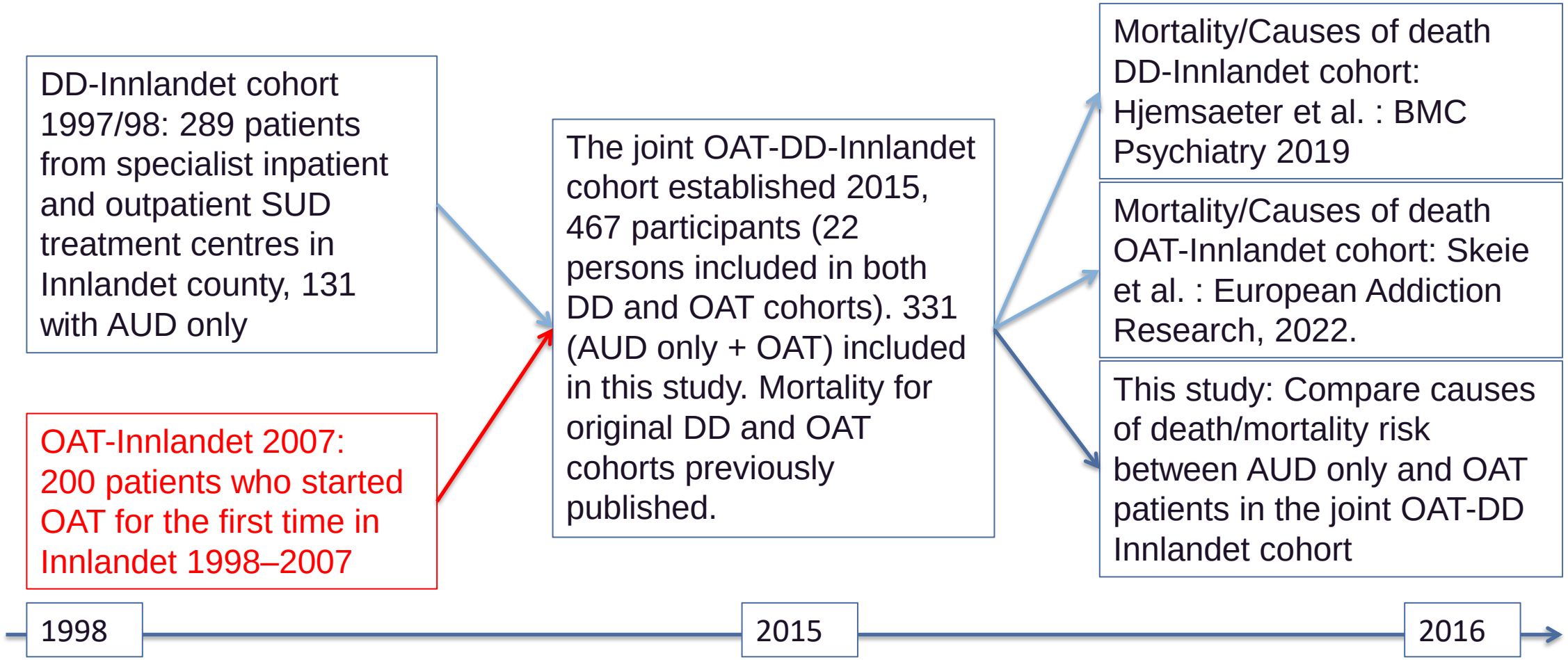

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The OAT*/DD**-Innlandet*** cohort (1998–2016)

DD-Innlandet cohort 1997/98: 289 patients from specialist inpatient and outpatient SUD treatment centres in Innlandet county, 131 with AUD only

OAT-Innlandet 2007: 200 patients who started OAT for the first time in Innlandet 1998–2007

The joint OAT-DD-Innlandet cohort established 2015, 467 participants (22 persons included in both DD and OAT cohorts). 331 (AUD only + OAT) included in this study. Mortality for original DD and OAT cohorts previously published.

Mortality/Causes of death DD-Innlandet cohort: Hjemsaeter et al. : BMC Psychiatry 2019

Mortality/Causes of death OAT-Innlandet cohort: Skeie et al. : European Addiction Research, 2022.

This study: Compare causes of death/mortality risk between AUD only and OAT patients in the joint OAT-DD Innlandet cohort

1998 — 2015 — 2016

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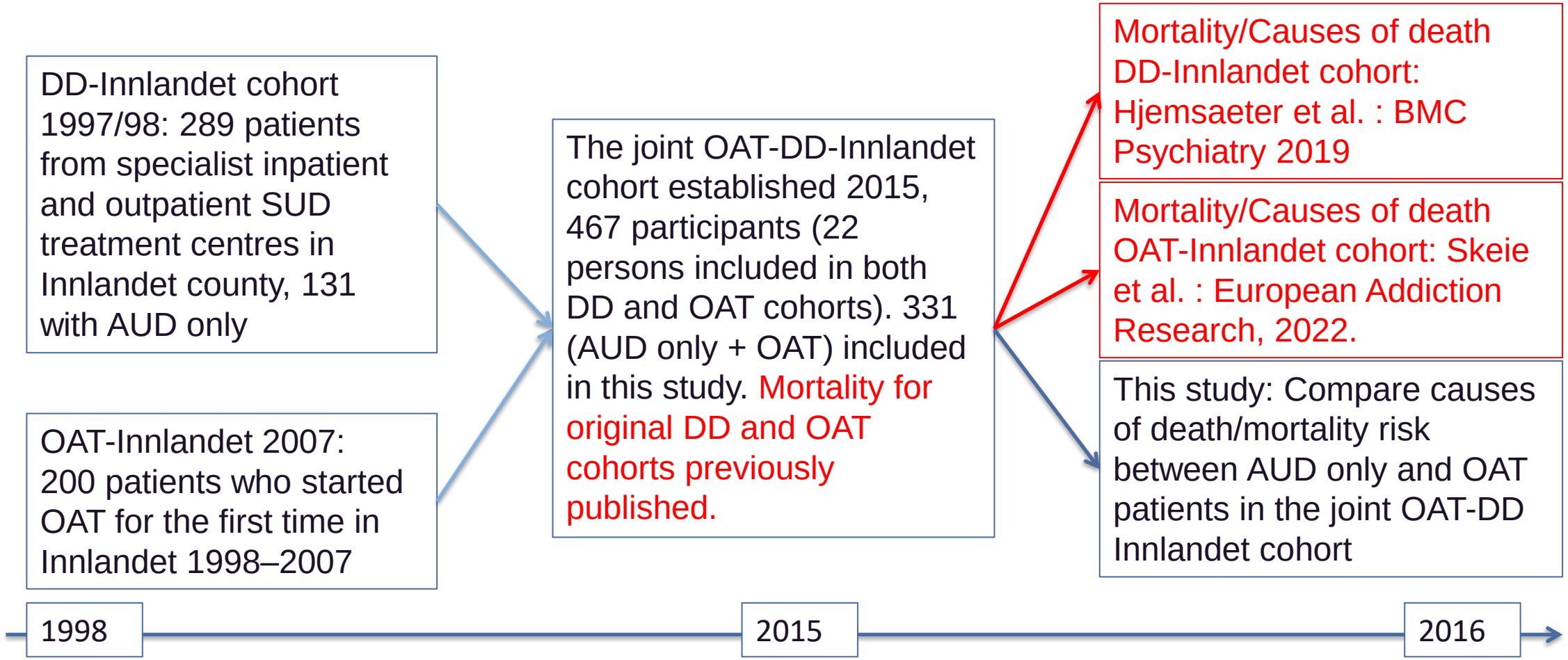

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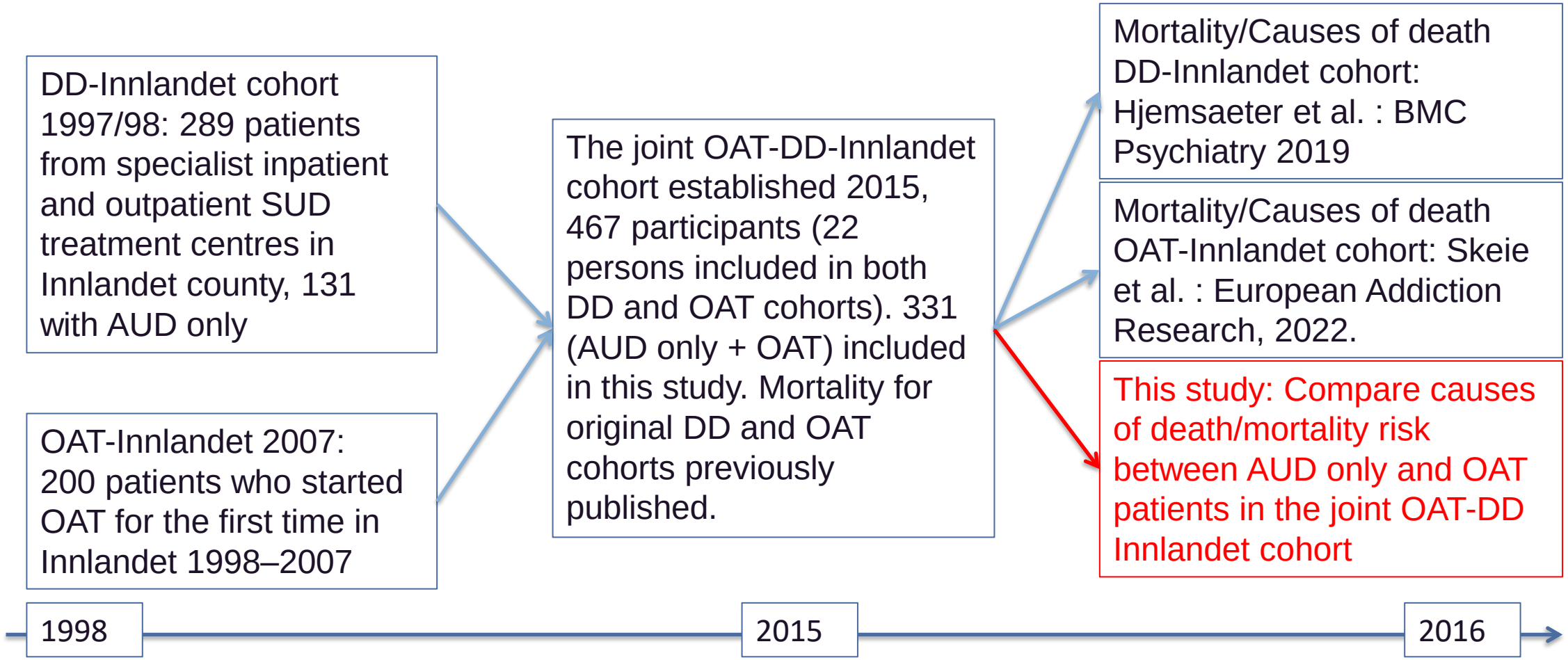

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Design

- Naturalistic cohort study
- Prospective study of mortality as of 1 Jan 1998 (alcohol only) or first entry to opioid agonist treatment 1998–2007 (OAT) until 31 Dec 2016
- Observation period: As of the individual entry to the study (AUD 1 Jan 1998, OAT from first OAT start) until death or 31 Dec 2016
- Mortality data from the Norwegian Cause of Death Registry
- Interview data
- Informed consent from the participants

Key cohort characteristics

	AUD only (n=130)	OUD/OAT (n=200)
Sex (male), n (%)	101 (78)	130 (67)
Age at AUD/OUD debut, median (min–max)	25 (14–58)*	17 (8–35)*,**
Age at baseline,1 Jan 1998, mean (SD)	45.8 (9.9)	31.7 (7.6)
Age at individual study entry	45.8 (9.9)	36.9 (6.8)
Died through 31 Dec 2016, n (%)	66 (51)	41 (21)
Age at death, mean (SD)	58,9 (10.6)	48.5 (6.8)

* Non-normal distribution, median (min–max)

** Those interviewed, n=131,

Causes of death*: ”Alcohol only” versus OAT Number of deaths (% of all deaths) – 1998–2016

	Alcohol only[1]	OAT[2]
	(66 of 131 died, 50%)	(41 of 200 died, 21%)
Somatic disease	38 (58)	22 (54)
Cancer	*14*	*7*
Cardiovascular	*7*	*3*
Lung	*6*	*4*
Liver	*4*	*5*
Others	*7*	*3*
Substance induced (overdose/SUD death cause)	18 (27)	11 (27)
Traumatic (accidents, suicide, homicide)	7 (11)	6 (15)
Unknown cause	3 (5)	2 (5)
Total	66 (101)	41 (101)

* The Norwegian Cause of Death Registry, 1) Hjemsæter 2019, 2) Skeie 2022

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Crude mortality rate (CMR) – deaths per 100 person years

	Intention-to-treat period (as of study inclusion)	On treatment	Off treatment
Alcohol (only)[1]	3,5 (2,8–4,5)[a]		
OAT[2]	1,8 (1,2–2,4)[a]	1,6 (1,1–2,2)[a]	3,6 (1,7–6,9)[a]

OAT: Off/on OAT rate ratio: 2,3 (1,0–4,9) , p=0,05, on OAT reference; that is a 57% reduction in mortality risk on versus off OAT.

[a]) 95% confidence interval

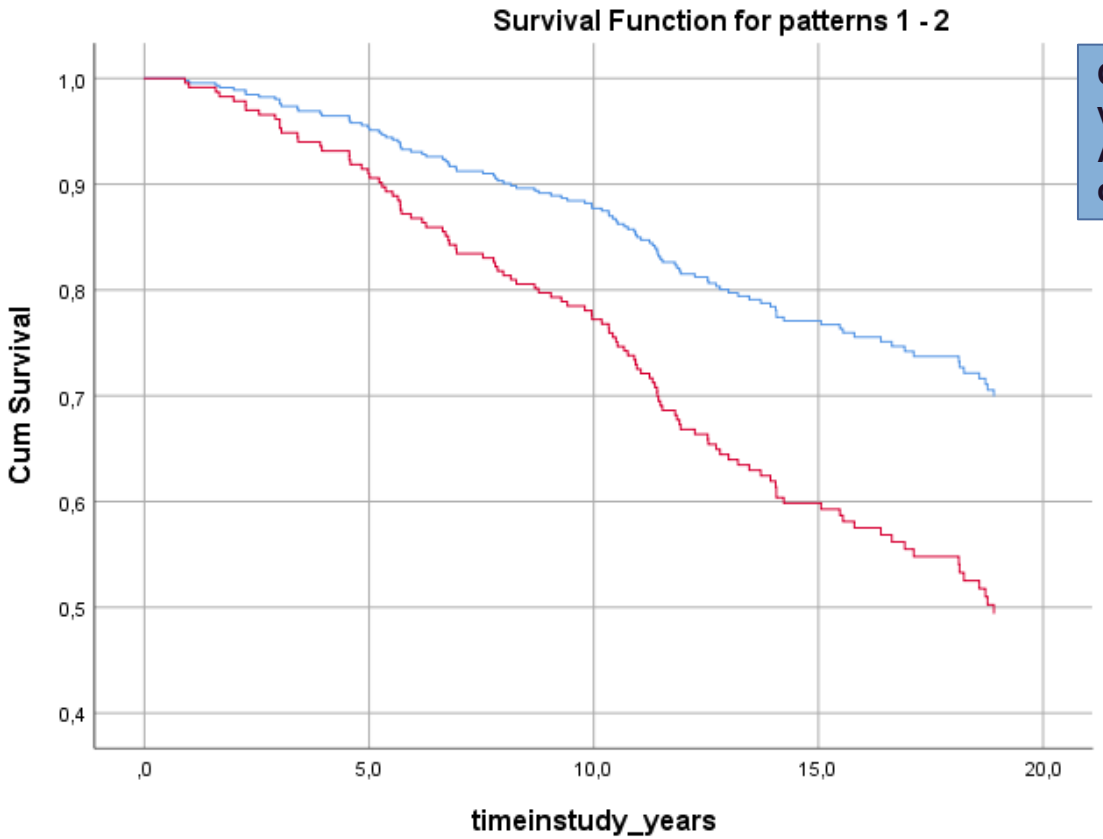
1) Hjemsæter 2019, 2) Skeie 2022

Standardized Mortality Rate (SMR) – ”excess mortality”

	Total	Men	Women
Alcohol only[1]	3,4 (2,6–4,2)		
OAT[2]	8,4 (6,1–11,2)	8.4 (5,8–11,6)	8,3 (3,9–15,8)

1) Hjemsæter 2019, 2) Skeie 2022

Mortality risk – adjusted for AUD versus OUD

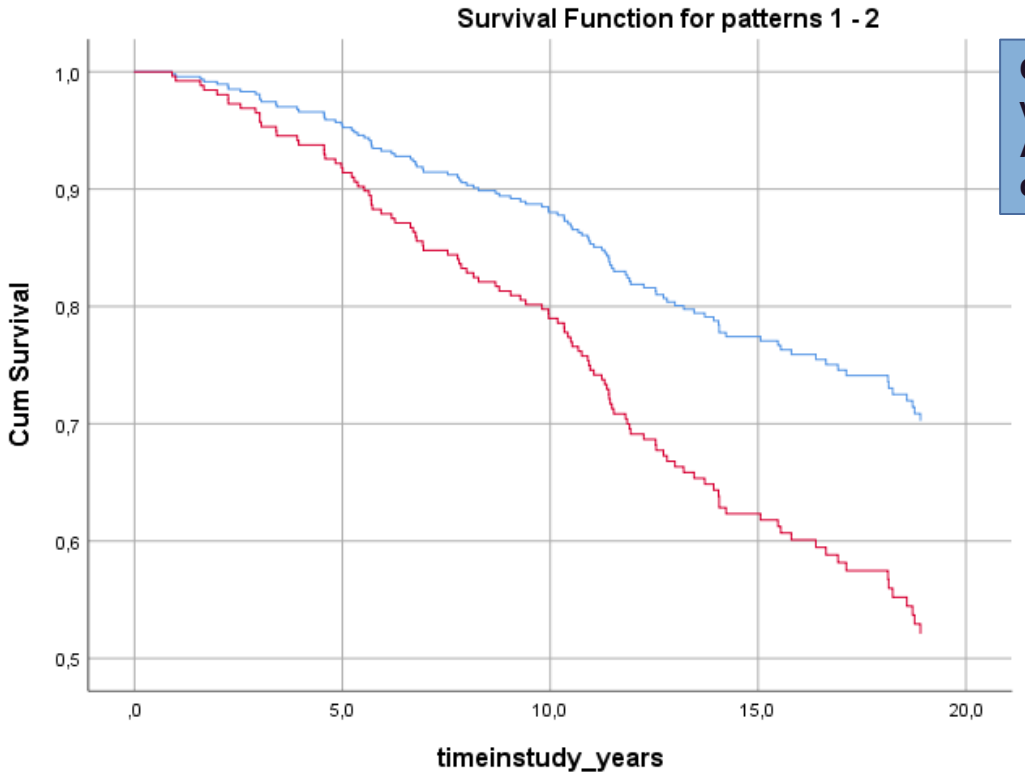


OAT (blue) versus Alcohol only (red)

Cox regression, hazard ratio adjusted for type of SUD:

Substance (Opioids (OAT) reference)
1,97 (1,32–2,96), p=0,001

Mortality risk – adjusted for type of SUD and sex



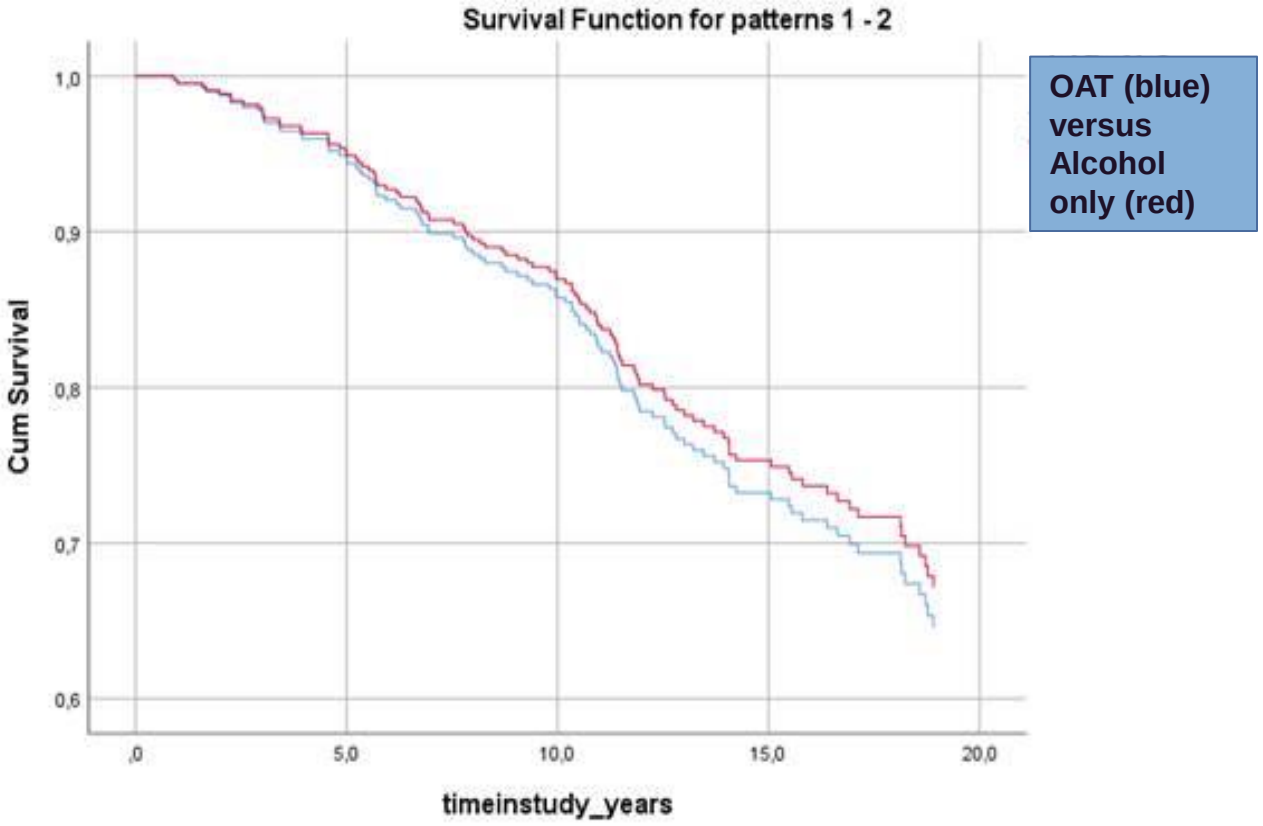
OAT (blue) versus Alcohol only (red)

Cox regression, hazard ratio adjusted for type of SUD, and sex:

Type of SUD (OAT reference)
1,85 (1,23–2,77), p=0,003

Sex (female reference)
2,27 (1,35–3,82), p=0,002

Mortality risk – adjusted for type of SUD, sex and baseline age



OAT (blue) versus Alcohol only (red)

Cox regression, hazard ratio adjusted for type of SUD, sex, and baseline age:

Type of SUD (OAT reference)
0,91 (0,54–1,53), p=0,723

Sex (female reference)
2,15 (1,28–3,62), p=0,004

Baseline age (per year)
1,05 (1,03–1,08), p=0,000

Conclusion

- Both the alcohol only and the OAT groups consist of people suffering severe substance use disorders recruited from specialist SUD treatment and they represent the ”core” of the alcohol and opioid use populations, respectively

- The distribution of causes of death (somatic disease – substance induced – traumatic) was very similar in the two groups

- Mortality risk adjusted for chronological age and sex was equal in the two groups; that is – in this cohort – the age adjusted mortality risk is the same for people with alcohol use disorder only and people with opioid dependence on and off OAT (intention-to-treat perspective)

Thank you for your attention!