

**Table 1:** Proportion of patients receiving systemic treatment between the diabetes and non-diabetes groups.

Cancer stage	Endocrine therapy (For ER+ or PR+ cancers)			HER2-targeted therapy (For HER2+ cancers)			Chemotherapy (For all cancers)		
	No diabetes	Diabetes	Total	No diabetes	Diabetes	Total	No diabetes	Diabetes	Total
<b>Number of patients eligible for treatment</b>									
I	9,901	1,144	11,045	1,309	89	1,398	11,241	1,259	12,500
II	7,151	1,069	8,220	1,349	181	1,530	8,554	1,253	9,807
III	2,330	332	2,662	650	73	723	2,856	394	3,250
IV	865	172	1,037	298	46	344	1,180	231	1,411
Total	20,247	2,717	22,964	3,606	389	3,995	23,831	3,137	26,968
<b>Number of patients receiving treatments</b>									
I	5,274	573	5,847	739	37	776	1,602	89	1,691
II	5,410	724	6,134	943	100	1,043	3,683	292	3,975
III	1,824	250	2,074	455	44	499	1,768	177	1,945
IV	483	94	577	227	32	259	597	83	680
Total	12,991	1,641	14,632	2,364	213	2,577	7,650	641	8,291
<b>Proportion of patients receiving treatments</b>									
I	53.3%	50.1%	52.9%	56.5%	41.6%	55.5%	14.3%	7.1%	13.5%
II	75.7%	67.7%	74.6%	69.9%	55.2%	68.2%	43.1%	23.3%	40.5%
III	78.3%	75.3%	77.9%	70.0%	60.3%	69.0%	61.9%	44.9%	59.8%
IV	55.8%	54.7%	55.6%	76.2%	69.6%	75.3%	50.6%	35.9%	48.2%
Total	64.2%	60.4%	63.7%	65.6%	54.8%	64.5%	32.1%	20.4%	30.7%

HER2 = human epidermal growth factor receptor 2; ER = estrogen receptor; PR = progesterone receptor.

**Table 2:** The odds ratio of having endocrine therapy for ER+ or PR+ cancers for patients with diabetes versus patients without diabetes.

Adjusted factors	Stage I	Stage II	Stage III	Stage IV	All stages
Unadjusted	0.88 (0.78–1.00)*	0.68 (0.59–0.78)***	0.85 (0.65–1.11)	0.95 (0.69–1.32)	0.85 (0.78–0.92)***
Period of diagnosis	0.88 (0.78–1.00)*	0.72 (0.62–0.83)***	0.91 (0.69–1.19)	0.92 (0.66–1.28)	0.87 (0.80–0.95)***
Age	0.98 (0.86–1.10)	0.89 (0.76–1.03)	1.05 (0.79–1.40)	0.73 (0.52–1.04)	1.00 (0.92–1.09)
Menopausal status	0.98 (0.86–1.11)	0.89 (0.76–1.04)	1.06 (0.80–1.41)	0.73 (0.52–1.04)	1.00 (0.92–1.09)
Ethnicity	0.94 (0.83–1.07)	0.93 (0.80–1.09)	1.24 (0.92–1.65)	0.70 (0.49–1.00)*	0.99 (0.91–1.08)
Deprivation quintile	0.92 (0.81–1.04)	0.94 (0.80–1.10)	1.25 (0.93–1.68)	0.70 (0.49–1.00)	0.98 (0.89–1.07)
Mode of detection	0.92 (0.81–1.05)	0.93 (0.80–1.09)	1.24 (0.92–1.66)	0.71 (0.50–1.02)	0.97 (0.89–1.07)
Comorbidities	0.99 (0.87–1.13)	1.06 (0.90–1.25)	1.38 (1.02–1.88)*	0.69 (0.47–1.00)*	1.06 (0.97–1.17)
Stage, grade, subtype	0.97 (0.85–1.12)	1.14 (0.95–1.37)	1.66 (1.16–2.36)**	0.67 (0.44–1.01)	1.05 (0.96–1.16)

ER = estrogen receptor; PR = progesterone receptor.

\*<0.05

\*\*<0.01

\*\*\*<0.001

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I	9,901	1,144	11,045	1,309	89	1,398	11,241	1,259	12,500
II	7,151	1,069	8,220	1,349	181	1,530	8,554	1,253	9,807
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IV	483	94	577	227	32	259	597	83	680
Total	12,991	1,641	14,632	2,364	213	2,577	7,650	641	8,291
<b>Proportion of patients receiving treatments</b>									
I	53.3%	50.1%	52.9%	56.5%	41.6%	55.5%	14.3%	7.1%	13.5%
II	75.7%	67.7%	74.6%	69.9%	55.2%	68.2%	43.1%	23.3%	40.5%
III	78.3%	75.3%	77.9%	70.0%	60.3%	69.0%	61.9%	44.9%	59.8%
IV	55.8%	54.7%	55.6%	76.2%	69.6%	75.3%	50.6%	35.9%	48.2%
Total	64.2%	60.4%	63.7%	65.6%	54.8%	64.5%	32.1%	20.4%	30.7%

HER2 = human epidermal growth factor receptor 2; ER = estrogen receptor; PR = progesterone receptor.

**Table 2:** The odds ratio of having endocrine therapy for ER+ or PR+ cancers for patients with diabetes versus patients without diabetes.

Adjusted factors	Stage I	Stage II	Stage III	Stage IV	All stages
Unadjusted	0.88 (0.78–1.00)*	0.68 (0.59–0.78)***	0.85 (0.65–1.11)	0.95 (0.69–1.32)	0.85 (0.78–0.92)***
Period of diagnosis	0.88 (0.78–1.00)*	0.72 (0.62–0.83)***	0.91 (0.69–1.19)	0.92 (0.66–1.28)	0.87 (0.80–0.95)***
Age	0.98 (0.86–1.10)	0.89 (0.76–1.03)	1.05 (0.79–1.40)	0.73 (0.52–1.04)	1.00 (0.92–1.09)
Menopausal status	0.98 (0.86–1.11)	0.89 (0.76–1.04)	1.06 (0.80–1.41)	0.73 (0.52–1.04)	1.00 (0.92–1.09)
Ethnicity	0.94 (0.83–1.07)	0.93 (0.80–1.09)	1.24 (0.92–1.65)	0.70 (0.49–1.00)*	0.99 (0.91–1.08)
Deprivation quintile	0.92 (0.81–1.04)	0.94 (0.80–1.10)	1.25 (0.93–1.68)	0.70 (0.49–1.00)	0.98 (0.89–1.07)
Mode of detection	0.92 (0.81–1.05)	0.93 (0.80–1.09)	1.24 (0.92–1.66)	0.71 (0.50–1.02)	0.97 (0.89–1.07)
Comorbidities	0.99 (0.87–1.13)	1.06 (0.90–1.25)	1.38 (1.02–1.88)*	0.69 (0.47–1.00)*	1.06 (0.97–1.17)
Stage, grade, subtype	0.97 (0.85–1.12)	1.14 (0.95–1.37)	1.66 (1.16–2.36)**	0.67 (0.44–1.01)	1.05 (0.96–1.16)

ER = estrogen receptor; PR = progesterone receptor.

\*<0.05

\*\*<0.01

\*\*\*<0.001

**Table 3:** The odds ratio of having targeted therapy for HER2+ cancers for patients with diabetes versus patients without diabetes.

Adjusted factors	Stage I	Stage II	Stage III	Stage IV	All stages
Unadjusted	0.55 (0.36–0.85)**	0.53 (0.39–0.73)***	0.65 (0.40–1.07)	0.72 (0.36–1.41)	0.64 (0.51–0.79)***
Period of diagnosis	0.53 (0.34–0.82)**	0.48 (0.35–0.66)***	0.59 (0.35–0.99)*	0.72 (0.36–1.43)	0.60 (0.49–0.75)***
Age	0.70 (0.44–1.10)	0.66 (0.47–0.94)*	0.90 (0.52–1.55)	0.96 (0.47–1.99)	0.84 (0.67–1.06)
Menopausal status	0.68 (0.43–1.08)	0.65 (0.46–0.93)*	0.86 (0.50–1.49)	0.98 (0.47–2.06)	0.83 (0.66–1.05)
Ethnicity	0.70 (0.44–1.12)	0.82 (0.57–1.18)	1.11 (0.63–1.97)	1.23 (0.56–2.67)	0.95 (0.75–1.21)
Deprivation quintile	0.73 (0.46–1.18)	0.86 (0.59–1.19)	1.13 (0.63–2.01)	1.20 (0.55–2.64)	0.98 (0.77–1.24)
Mode of detection	0.74 (0.46–1.18)	0.86 (0.59–1.26)	1.10 (0.62–1.98)	1.21 (0.55–2.67)	0.98 (0.77–1.24)
Comorbidities	0.84 (0.52–1.37)	1.02 (0.68–1.51)	1.61 (0.85–3.06)	2.04 (0.83–5.03)	1.15 (0.89–1.48)
Stage, grade, subtype	0.85 (0.52–1.41)	0.99 (0.66–1.51)	1.56 (0.80–3.07)	1.89 (0.75–4.77)	1.04 (0.80–1.35)

HER2 = human epidermal growth factor receptor 2.

\*<0.05

\*\*<0.01

\*\*\*<0.001

**Table 4:** The odds ratio of having chemotherapy for patients with diabetes versus patients without diabetes.

Adjusted factors	Stage I	Stage II	Stage III	Stage IV	All stages
Unadjusted	0.46 (0.37–0.57)***	0.40 (0.35–0.46)***	0.50 (0.41–0.62)***	0.55 (0.41–0.73)***	0.54 (0.50–0.59)***
Period of diagnosis	0.46 (0.37–0.57)***	0.41 (0.36–0.47)***	0.51 (0.41–0.63)***	0.55 (0.41–0.73)***	0.55 (0.51–0.61)***
Age	0.66 (0.53–0.83)***	0.68 (0.58–0.79)***	0.83 (0.65–1.05)	0.79 (0.58–1.09)	0.86 (0.78–0.95)**
Menopausal status	0.65 (0.52–0.82)***	0.66 (0.57–0.77)***	0.78 (0.61–1.00)*	0.77 (0.56–1.06)	0.85 (0.77–0.94)**
Ethnicity	0.70 (0.56–0.88)**	0.72 (0.61–0.84)***	0.97 (0.76–1.25)	0.84 (0.60–1.17)	0.87 (0.78–0.96)**
Deprivation quintile	0.71 (0.56–0.89)**	0.72 (0.61–0.85)***	0.99 (0.77–1.28)	0.79 (0.56–1.10)	0.87 (0.78–0.96)**
Mode of detection	0.72 (0.57–0.90)**	0.72 (0.62–0.85)***	0.96 (0.75–1.25)	0.84 (0.60–1.17)	0.87 (0.79–0.96)**
Comorbidities	0.76 (0.60–0.96)*	0.81 (0.69–0.96)*	1.19 (0.91–1.57)	1.12 (0.79–1.60)	0.96 (0.87–1.07)
Stage, grade, subtype	0.83 (0.63–1.11)	0.71 (0.59–0.86)***	1.15 (0.87–1.52)	1.09 (0.76–1.57)	0.85 (0.75–0.97)*

\*<0.05

\*\*<0.01

\*\*\*<0.001

**Table 5:** The odds ratios of having systemic treatments for patients with diabetes versus patients without diabetes by ethnic group.

Systemic treatment	Odds ratio	Māori	Pacific	Asian	European/Others
Endocrine therapy	Unadjusted	0.95 (0.77–1.17)	0.85 (0.68–1.07)	0.68 (0.53–0.86)**	0.79 (0.71–0.88)***
	Adjusted†	1.10 (0.87–1.42)	1.02 (0.77–1.35)	0.90 (0.67–1.22)	1.04 (0.91–1.18)
HER2-targeted therapy	Unadjusted	0.98 (0.59–1.63)	0.71 (0.43–1.15)	0.58 (0.32–1.05)	0.53 (0.39–0.73)***
	Adjusted†	1.44 (0.74–2.79)	0.95 (0.49–1.85)	0.86 (0.40–1.84)	1.02 (0.69–1.49)
Chemotherapy	Unadjusted	0.52 (0.42–0.65)***	0.42 (0.33–0.53)***	0.47 (0.37–0.61)***	0.51 (0.44–0.58)***
	Adjusted†	0.87 (0.65–1.16)	0.70 (0.51–0.94)*	0.74 (0.52–1.05)	0.90 (0.76–1.08)

HER2 = human epidermal growth factor receptor 2.

\*<0.05

\*\*<0.01

\*\*\*<0.001

†Adjusted for period of diagnosis, age, menopausal status, deprivation quintile, mode of detection, comorbidities, cancer stage, grade and biomarker subtype.