LUNG TRANSPLANTATION

Adult Recipients

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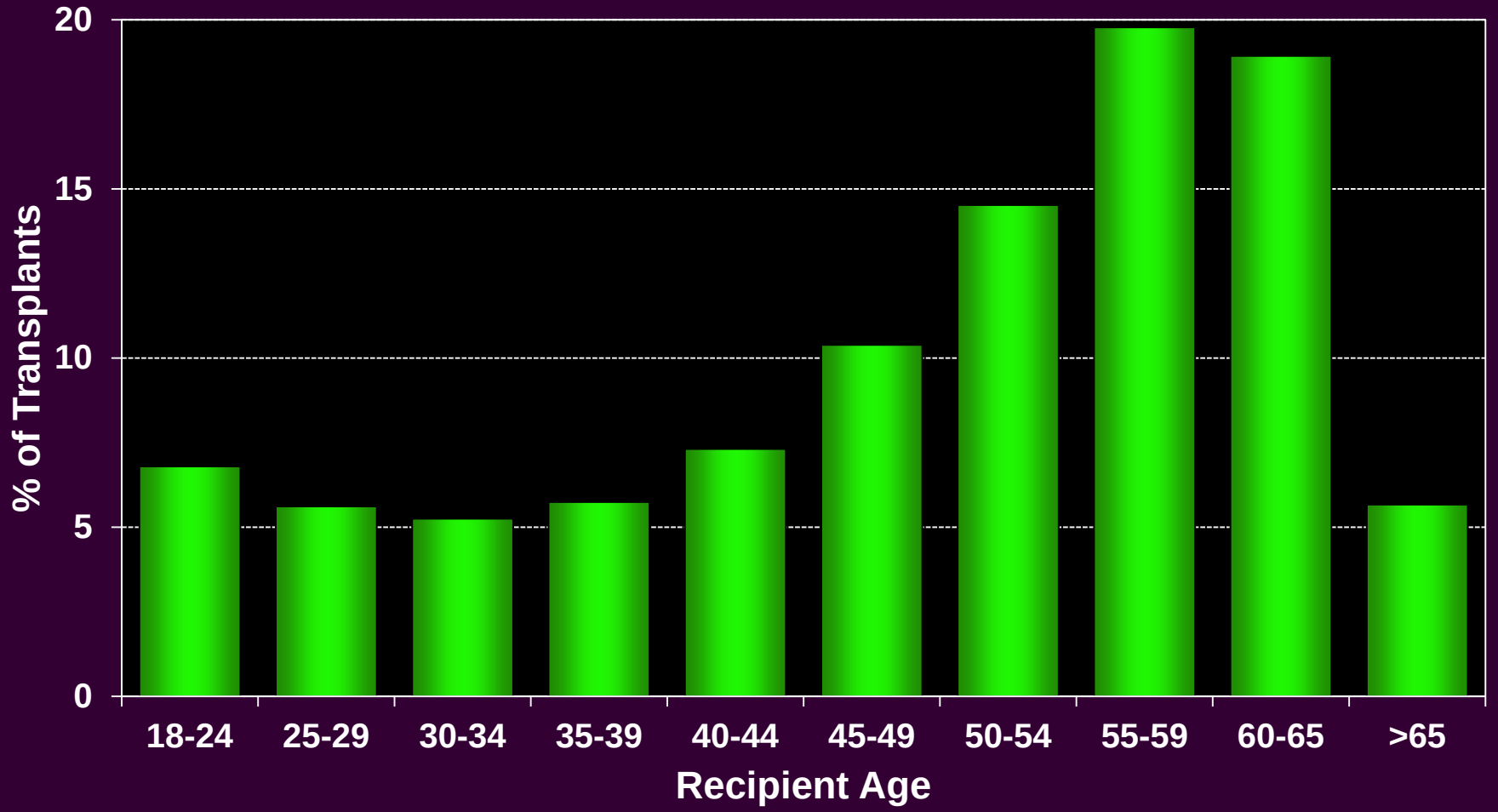
Donor and Recipient Characteristics

Adult Lung Transplants

Recipient Age Distribution (Transplants: January 1985 – June 2012)



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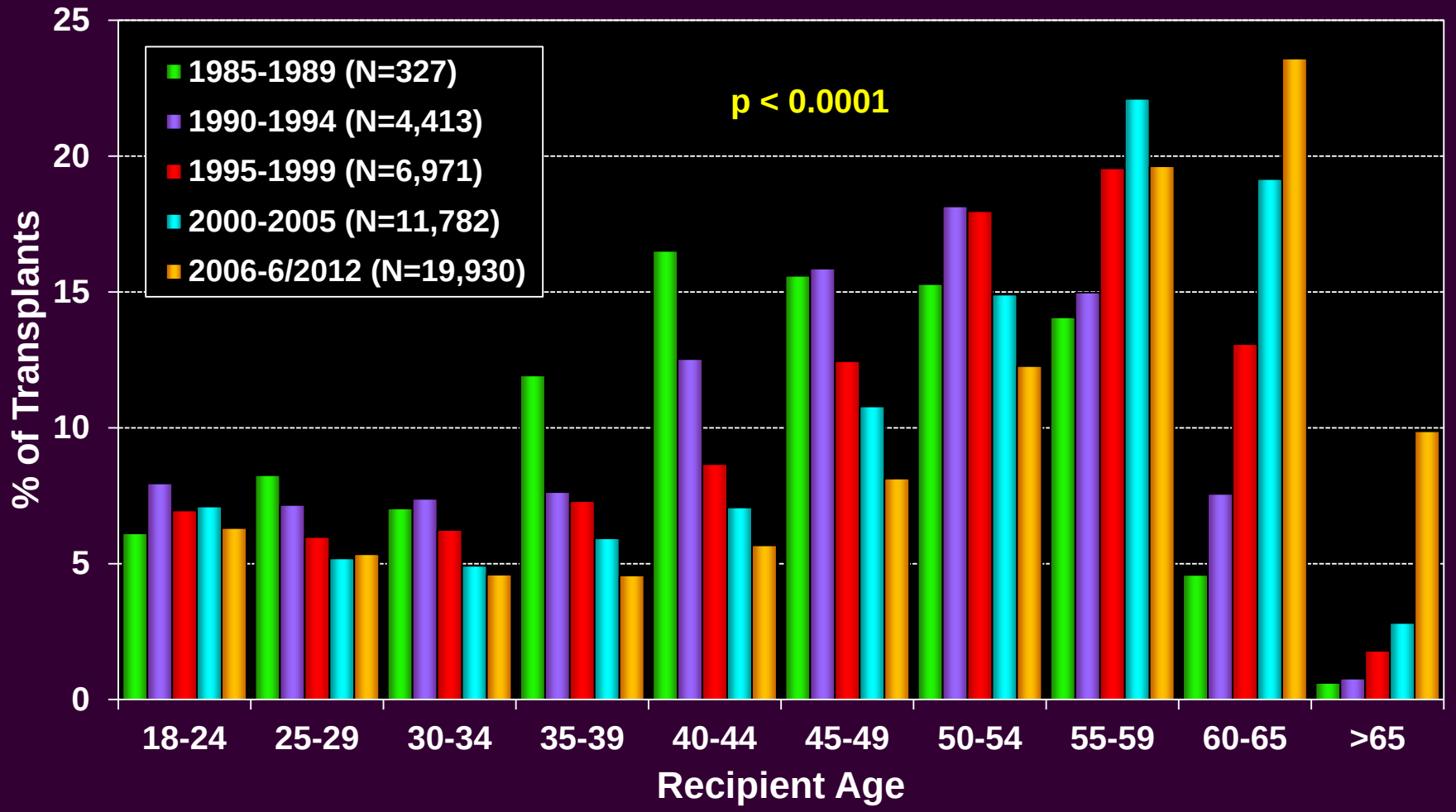
Adult Lung Transplants
Recipient Age Distribution by Era



Median age by era (years):
1985-1989 = 45; 1990-1994 = 47; 1995-1999 = 50; 2000-2005 = 53; 2006-6/2012 = 55;

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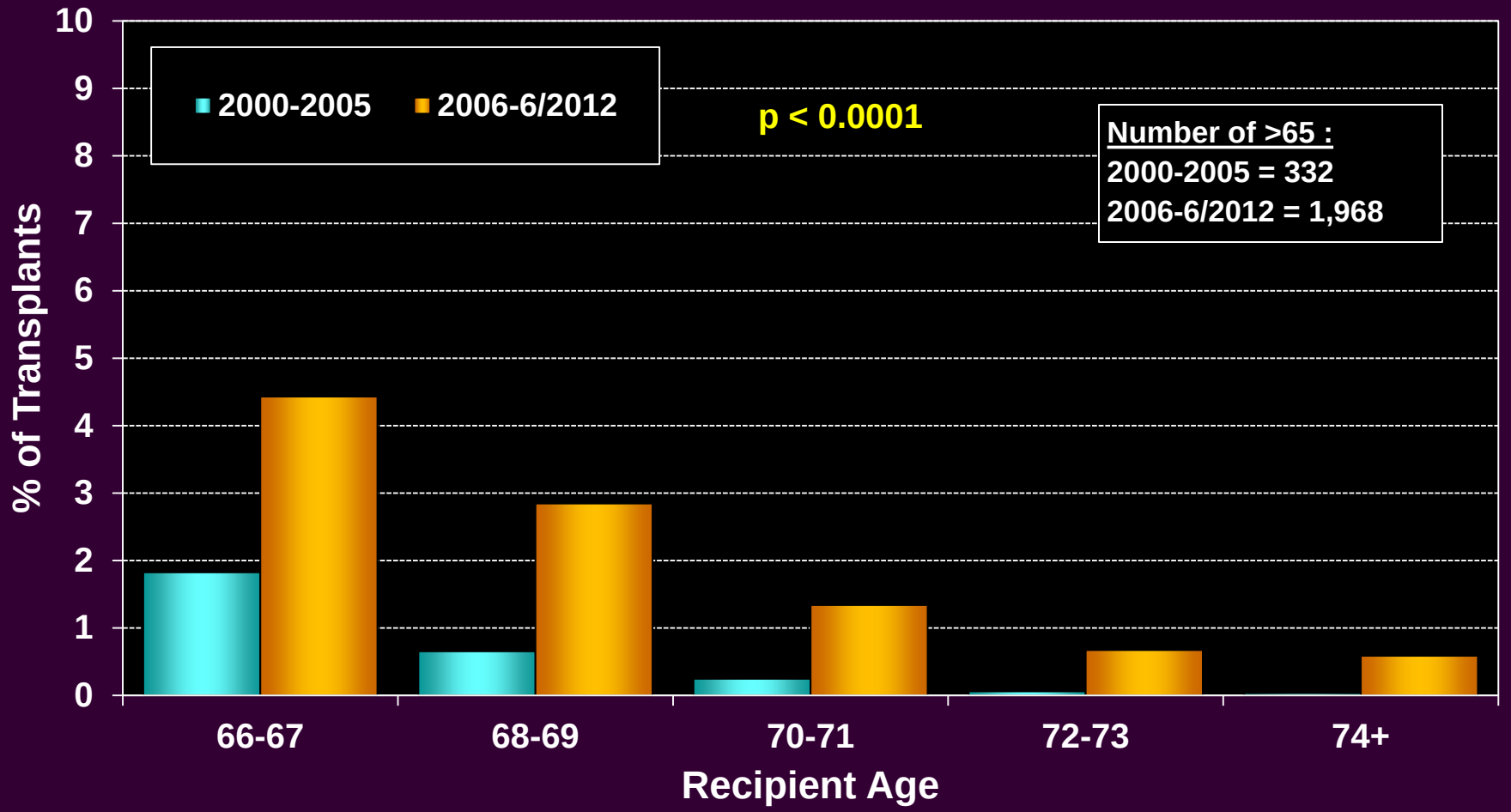
Adult Lung Transplants
Recipient Age Distribution by Era



p-value comparing percentages of >65 between eras < 0.0001

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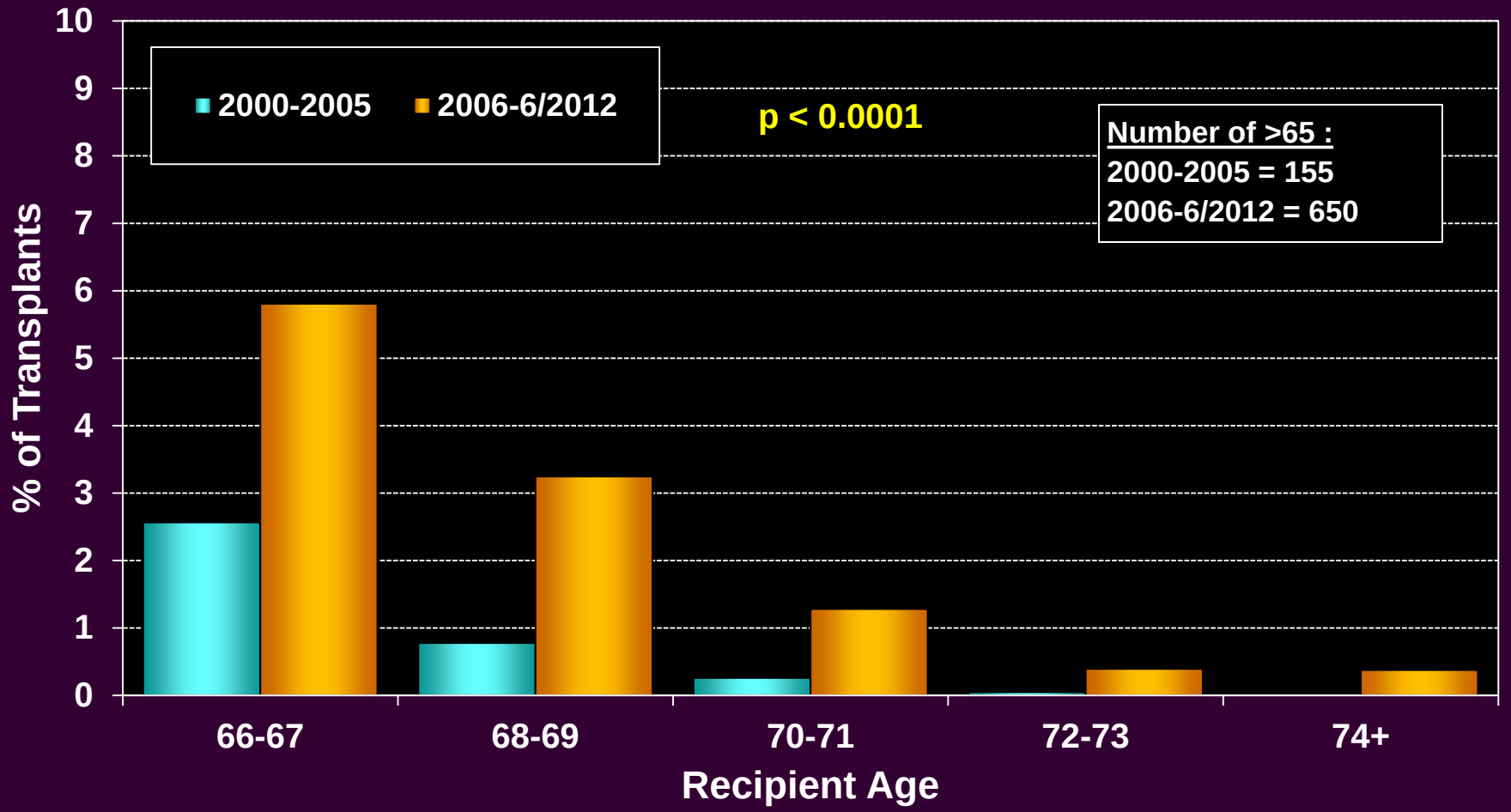
Adult Lung Transplants
Recipient Age Distribution by Era
Diagnosis: COPD/Emphysema



p-value comparing percentages of >65 between eras < 0.0001

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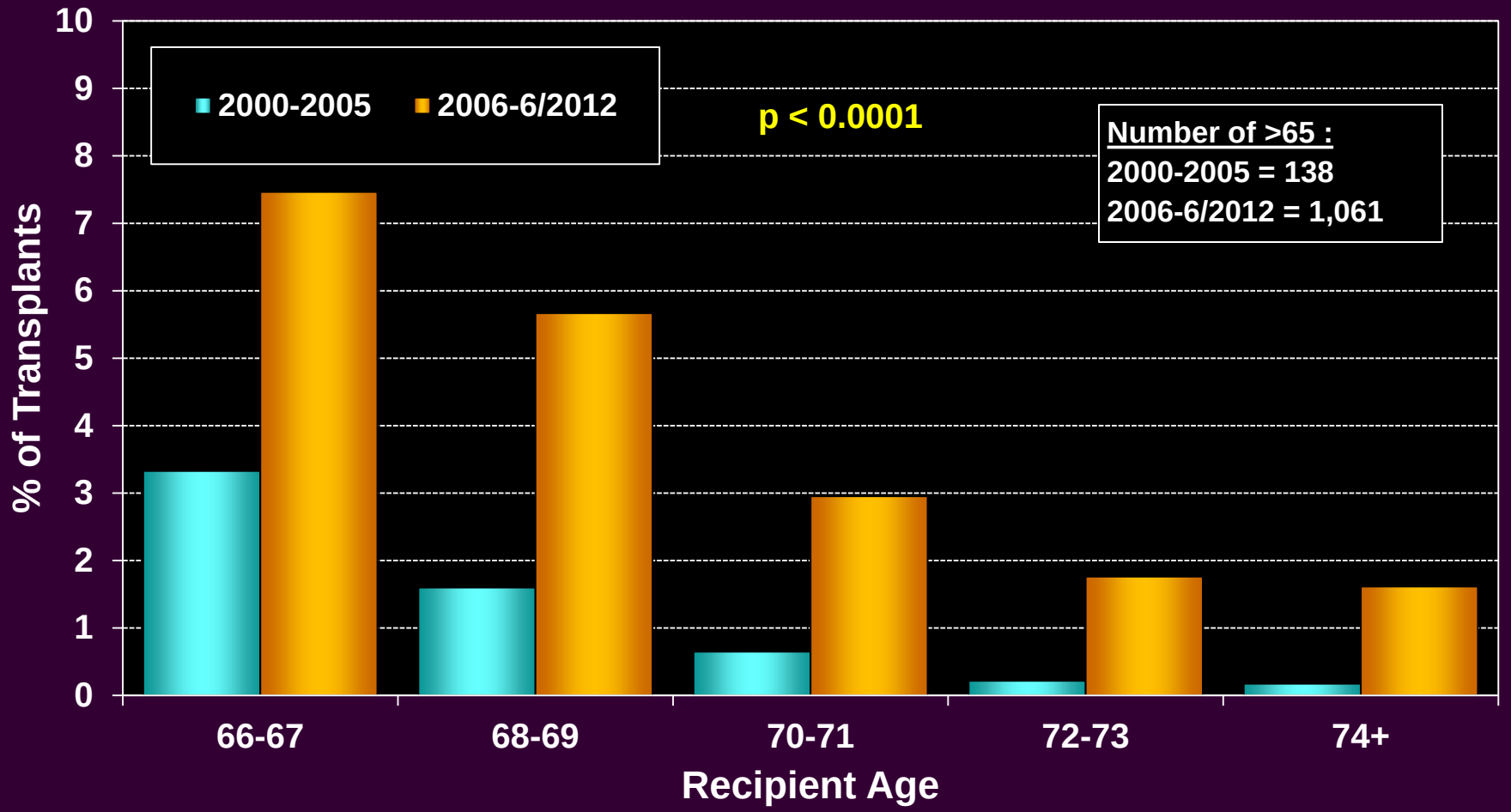
Adult Lung Transplants
Recipient Age Distribution by Era
Diagnosis: IPF



p-value comparing percentages of >65 between eras < 0.0001

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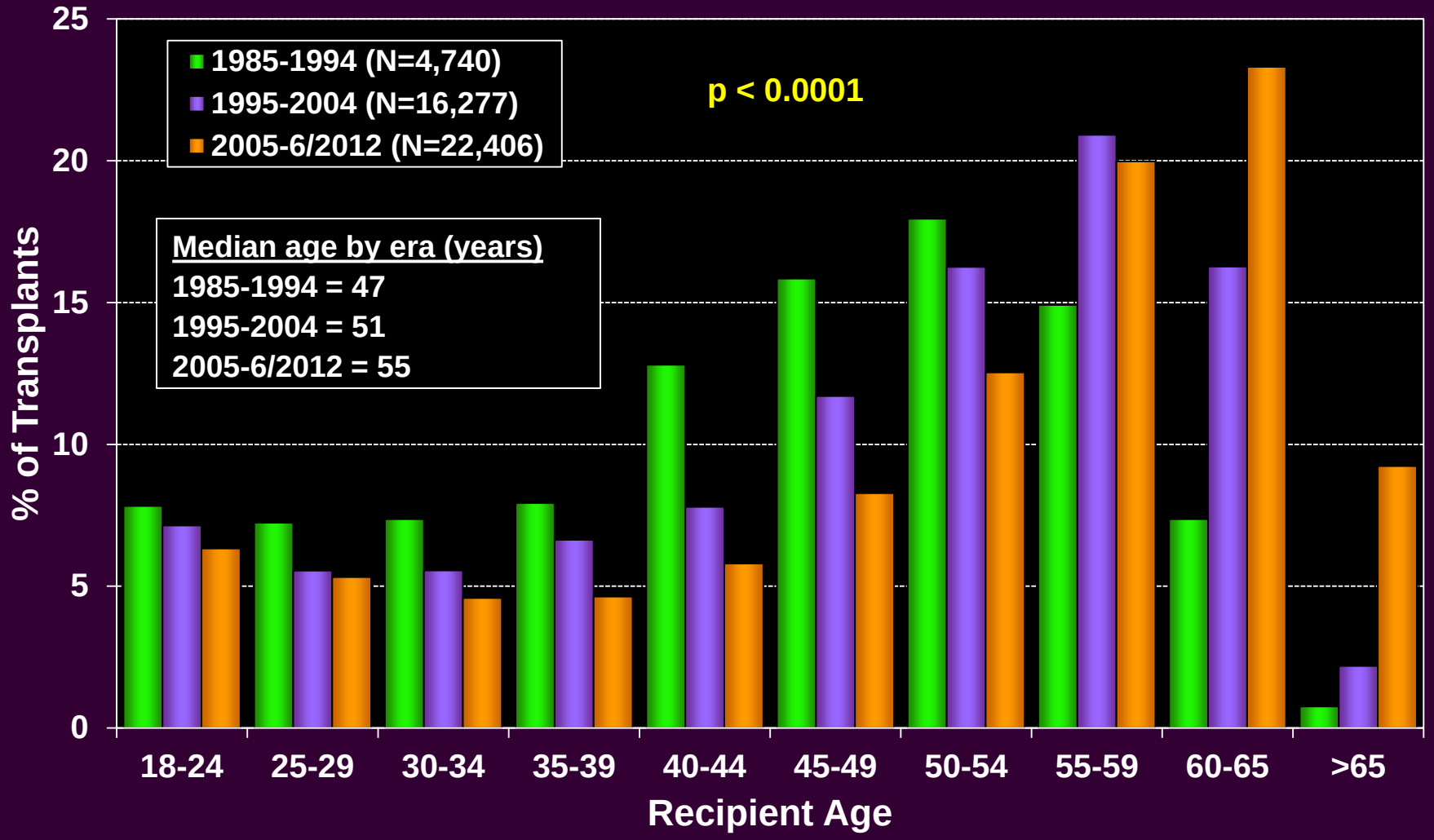
Adult Lung Transplants
Recipient Age Distribution by Era



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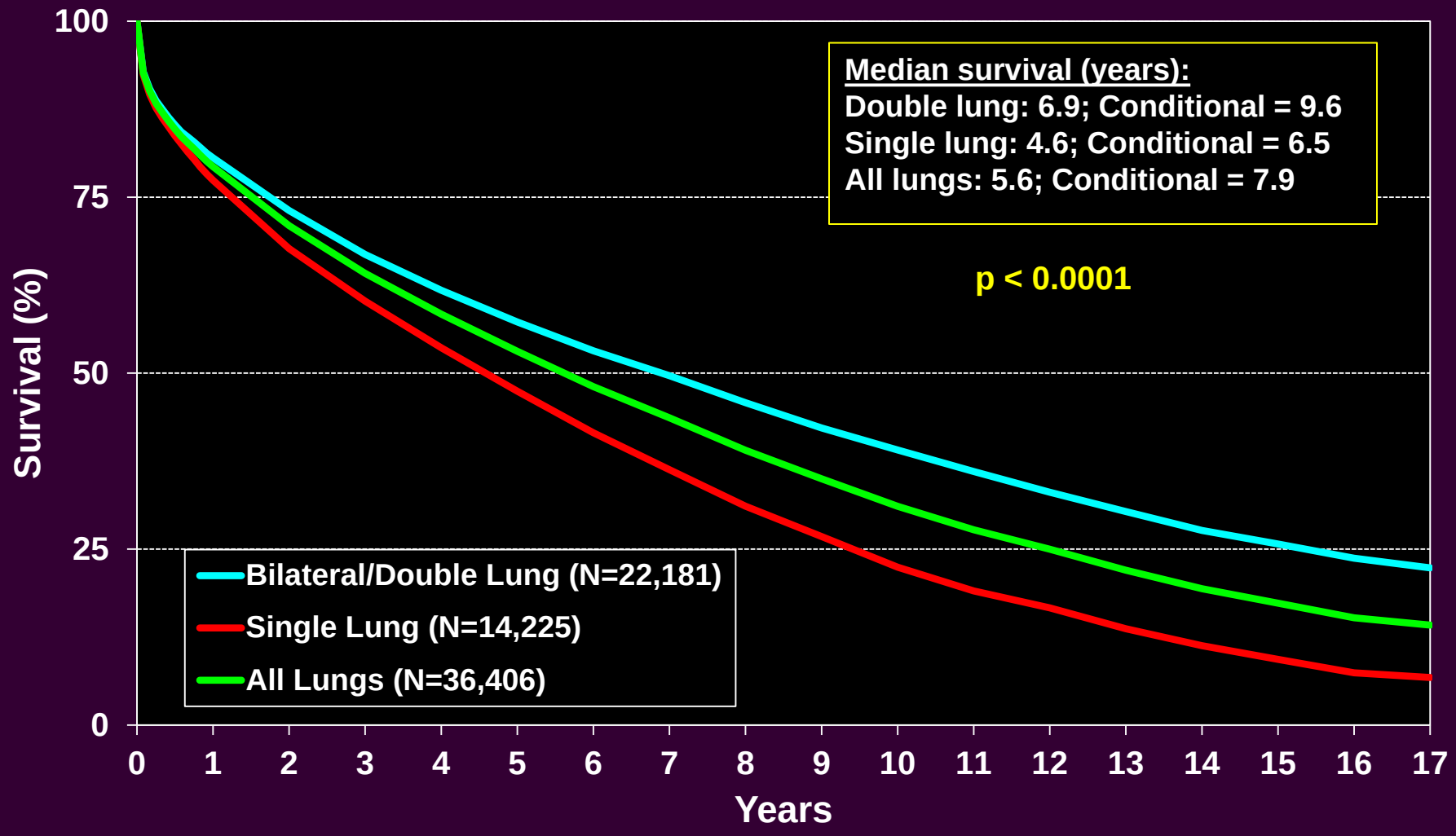
Adult Lung Transplants
Kaplan-Meier Survival by Procedure Type
(Transplants: January 1994 – June 2011)



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Adult Lung Transplants
Indications (Transplants: January 1995 – June 2012)

Diagnosis	SLT (N = 14,197)	BLT (N = 23,384)	TOTAL (N = 37,581)
COPD/Emphysema	6,312 (44.5%)	6,290 (26.9%)	12,602 (33.5%)
Idiopathic Pulmonary Fibrosis	4,872 (34.3%)	4,032 (17.2%)	8,904 (23.7%)
Cystic Fibrosis	229 (1.6%)	6,002 (25.7%)	6,231 (16.6%)
Alpha-1	753 (5.3%)	1,429 (6.1%)	2,182 (5.8%)
Idiopathic Pulmonary Arterial Hypertension	87 (0.6%)	1,073 (4.6%)	1,160 (3.1%)
Pulmonary Fibrosis, Other	563 (4.0%)	820 (3.5%)	1,383 (3.7%)
Bronchiectasis	59 (0.4%)	956 (4.1%)	1,015 (2.7%)
Sarcoidosis	265 (1.9%)	689 (2.9%)	954 (2.5%)
Re-Transplant: Obliterative Bronchiolitis	276 (1.9%)	292 (1.2%)	568 (1.5%)
Connective Tissue Disease	156 (1.1%)	332 (1.4%)	488 (1.3%)
Obliterative Bronchiolitis (Not Re-Transplant)	98 (0.7%)	298 (1.3%)	396 (1.1%)
LAM	136 (1.0%)	255 (1.1%)	391 (1.0%)
Re-Transplant: Not Obliterative Bronchiolitis	182 (1.3%)	220 (0.9%)	402 (1.1%)
Congenital Heart Disease	56 (0.4%)	269 (1.2%)	325 (0.9%)
Cancer	7 (0.0%)	29 (0.1%)	36 (0.1%)
Other	146 (1.0%)	398 (1.7%)	544 (1.4%)

Adult Lung Transplants
Distribution of Procedure Type for Major Indications by Year

Year of TX	Alpha-1		COPD		Cystic Fibrosis		IPF		IPAH	
	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single
1997	46.4	53.6	27.5	72.5	92.6	7.4	21.5	78.5	90.3	9.7
1998	48.2	51.8	30.2	69.8	93.6	6.4	19.1	80.9	87	13
1999	46.6	53.4	28	72	91.3	8.7	23.3	76.7	86.4	13.6
2000	57.9	42.1	29.3	70.7	94.2	5.8	30.7	69.3	93	7
2001	59.9	40.1	30.2	69.8	93.9	6.1	31.2	68.8	90	10
2002	56.3	43.7	38.9	61.1	96.2	3.8	35	65	88.1	11.9
2003	65.2	34.8	43.2	56.8	95.6	4.4	41.3	58.7	95.6	4.4
2004	73.9	26.1	45.8	54.2	96.3	3.7	44.1	55.9	94.5	5.5
2005	78	22	49.4	50.6	97.3	2.7	45.9	54.1	92.6	7.4
2006	72.8	27.2	58.3	41.7	98.5	1.5	46.7	53.3	100	0
2007	83.6	16.4	63.8	36.2	97.3	2.7	48.9	51.1	94.7	5.3
2008	80.2	19.8	65.6	34.4	98.6	1.4	51.2	48.8	93.9	6.1
2009	86.4	13.6	66.4	33.6	99.8	0.2	50.8	49.2	98.6	1.4
2010	86.2	13.8	70.4	29.6	99.2	0.8	55.3	44.7	95.7	4.3
2011	87.1	12.9	72.8	27.2	98.6	1.4	53.5	46.5	96.8	3.2

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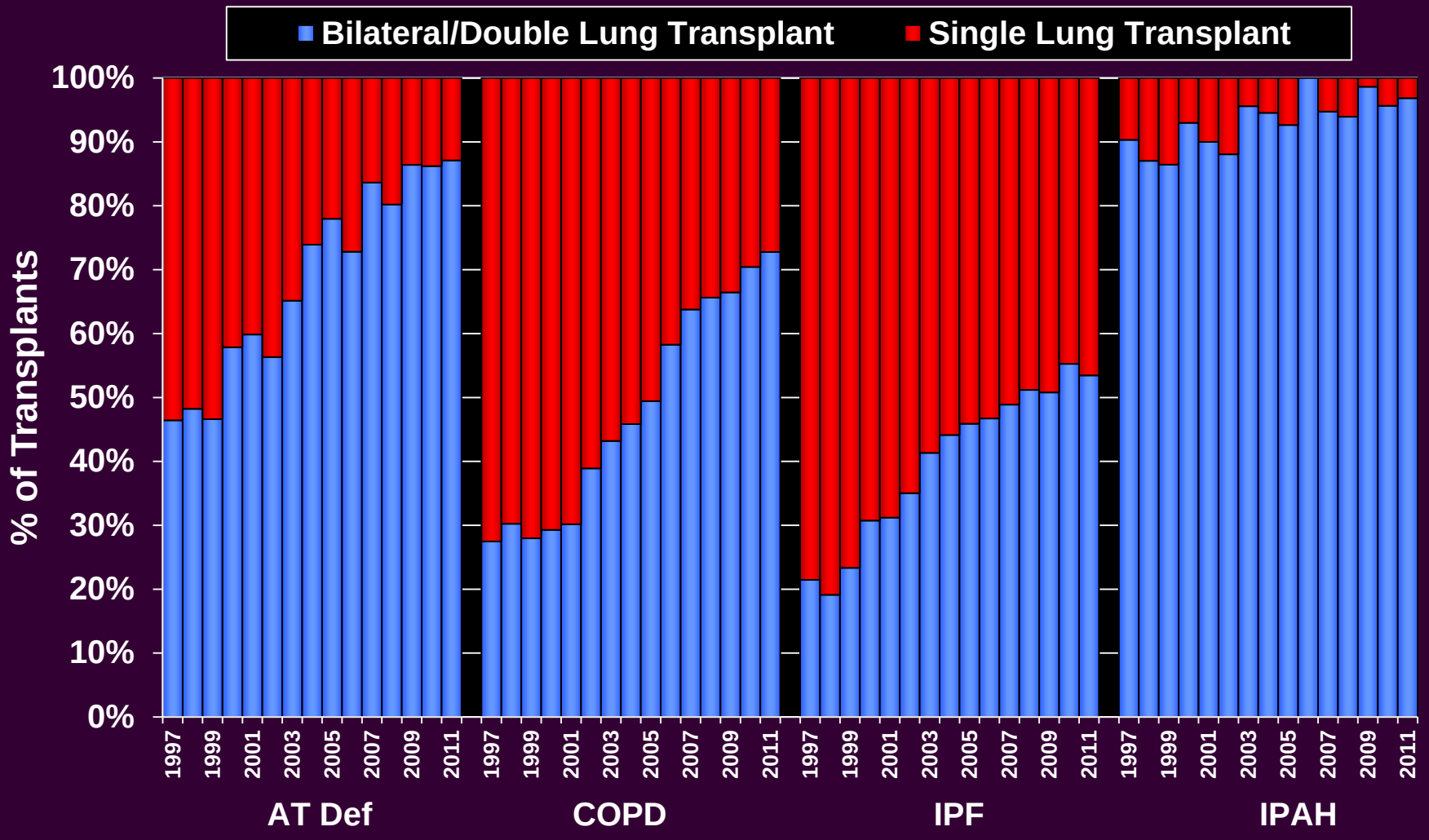
Adult Lung Transplants
Procedure Type within Indication, by Year



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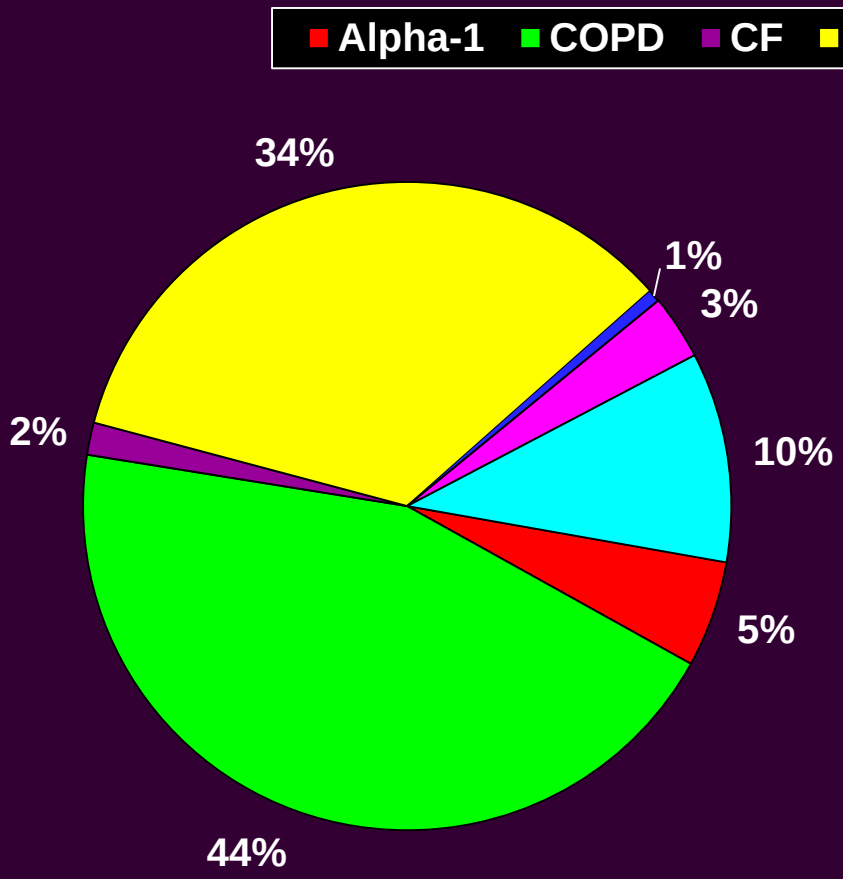
Adult Lung Transplants
Indications for Single Lung Transplants
(Transplants: January 1995 – June 2012)



*Other includes:	
Pulmonary Fibrosis, Other:	4.0%
Bronchiectasis:	0.4%
Sarcoidosis:	1.9%
Connective Tissue Disease:	1.1%
OB (non-ReTx):	0.7%
LAM:	1.0%
Congenital Heart Disease:	0.4%
Miscellaneous:	1.1%

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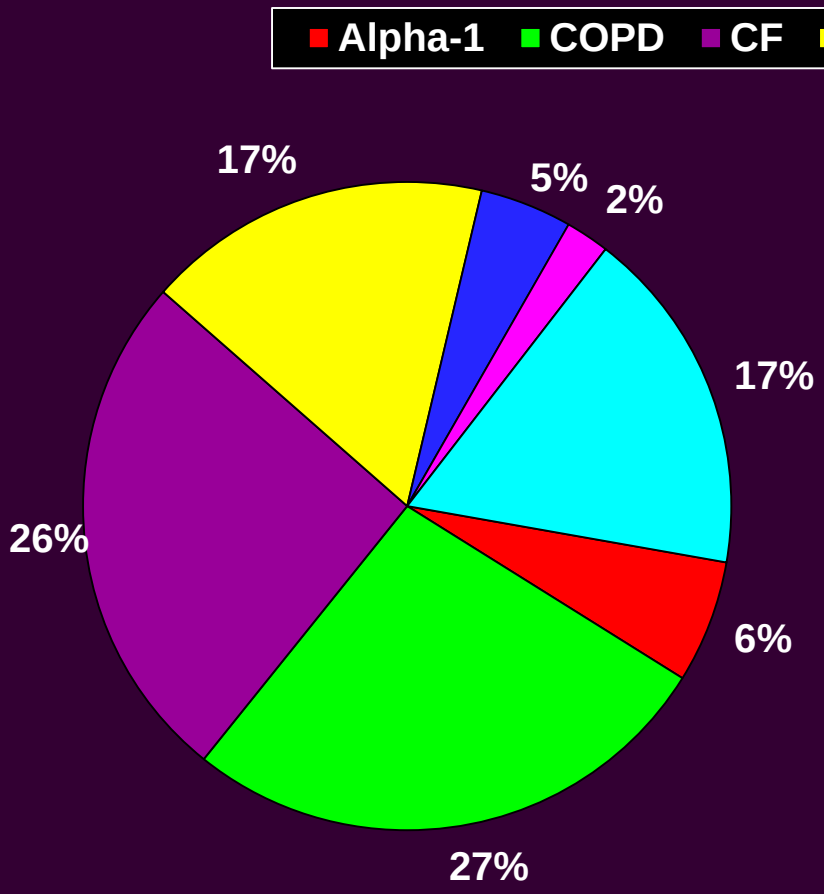
Adult Lung Transplants
Indications for Bilateral/Double Lung Transplants
(Transplants: January 1995 – June 2012)



***Other includes:**

Pulmonary Fibrosis, Other:	3.5%
Bronchiectasis:	4.1%
Sarcoidosis:	2.9%
Connective Tissue Disease:	1.4%
OB (non-ReTx):	1.3%
LAM:	1.1%
Congenital Heart Disease:	1.2%
Miscellaneous:	1.8%

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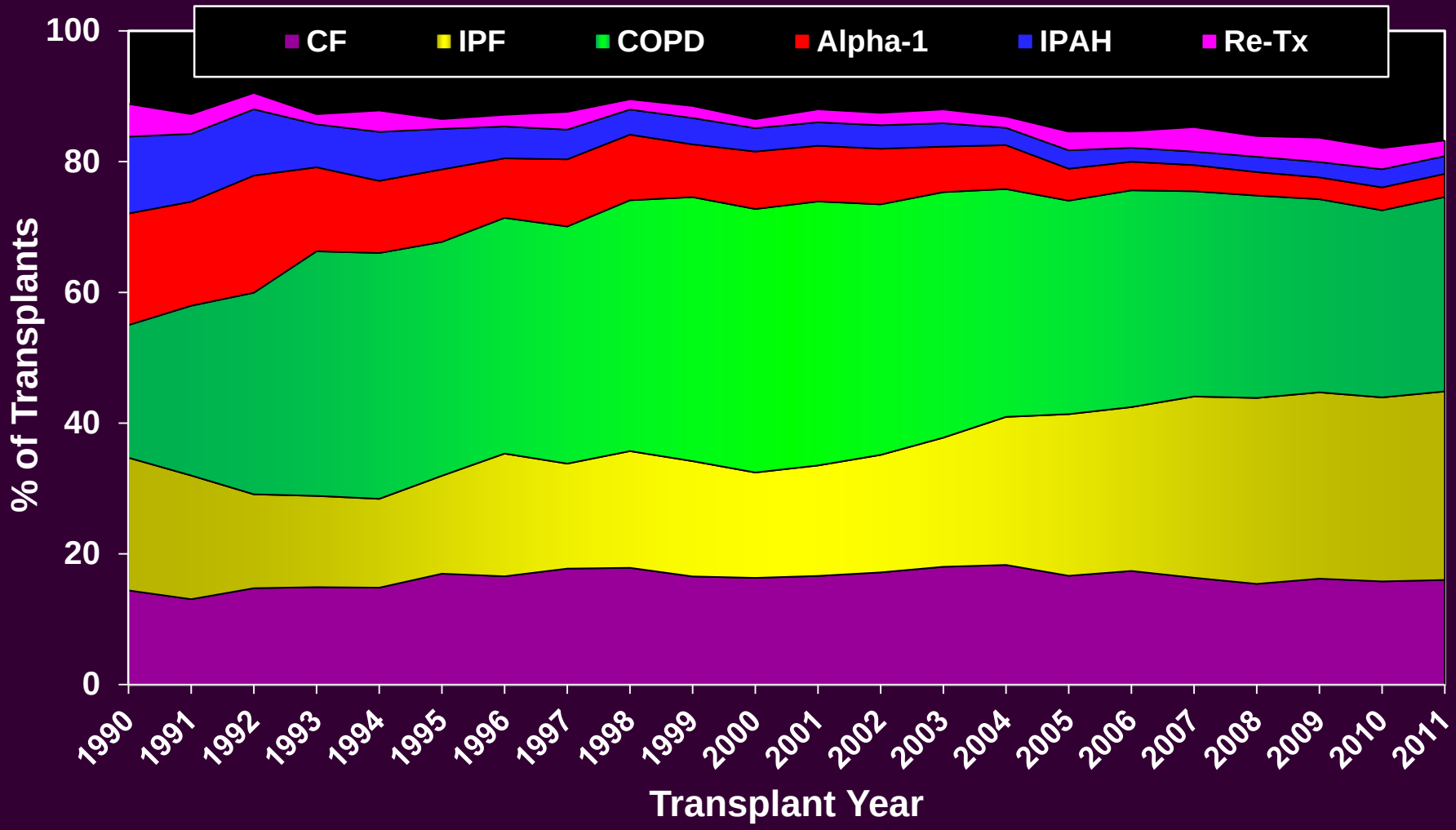
Adult Lung Transplants
Major Indications By Year (%)



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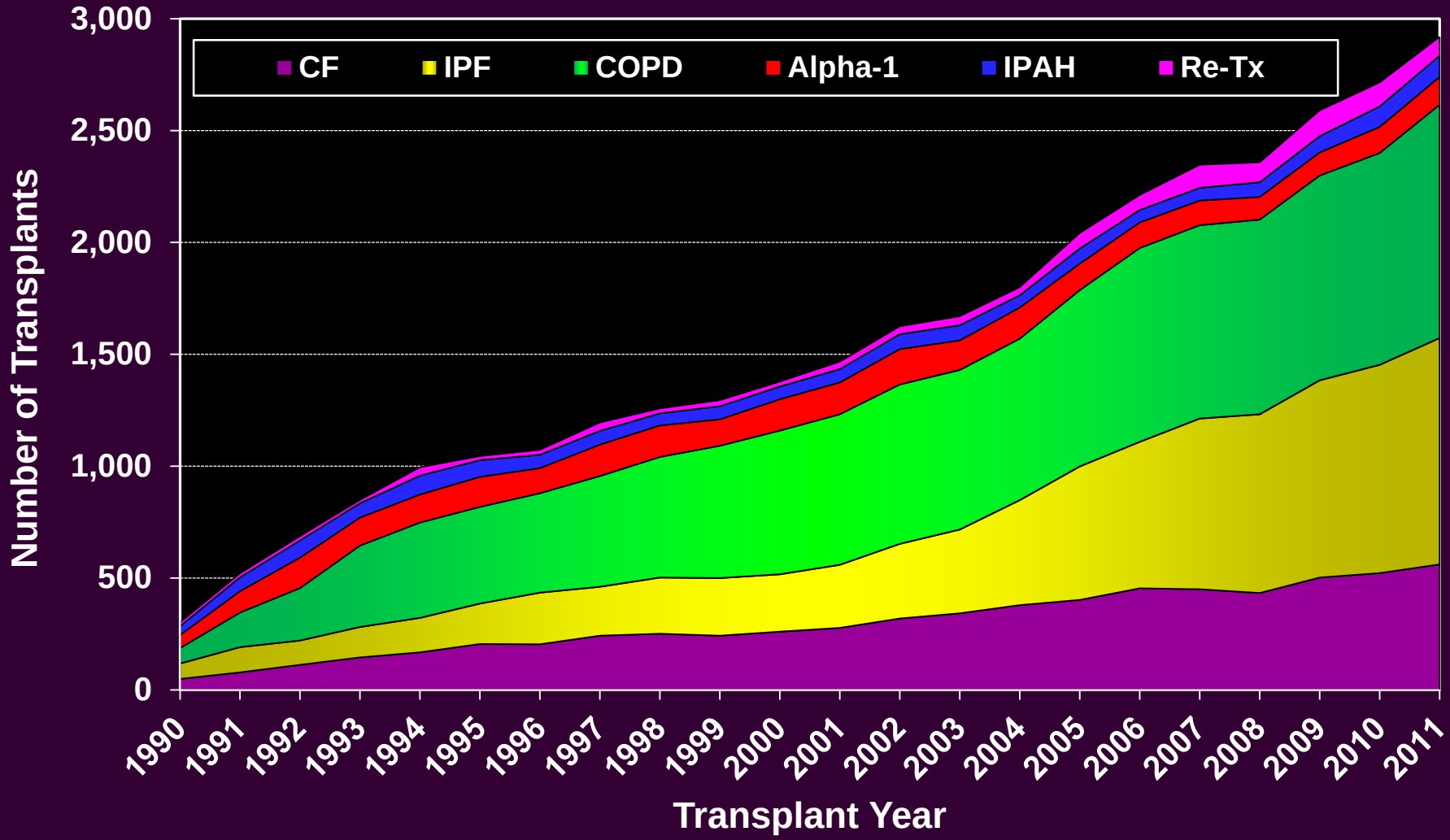
Adult Lung Transplants
Major Indications By Year (Number)



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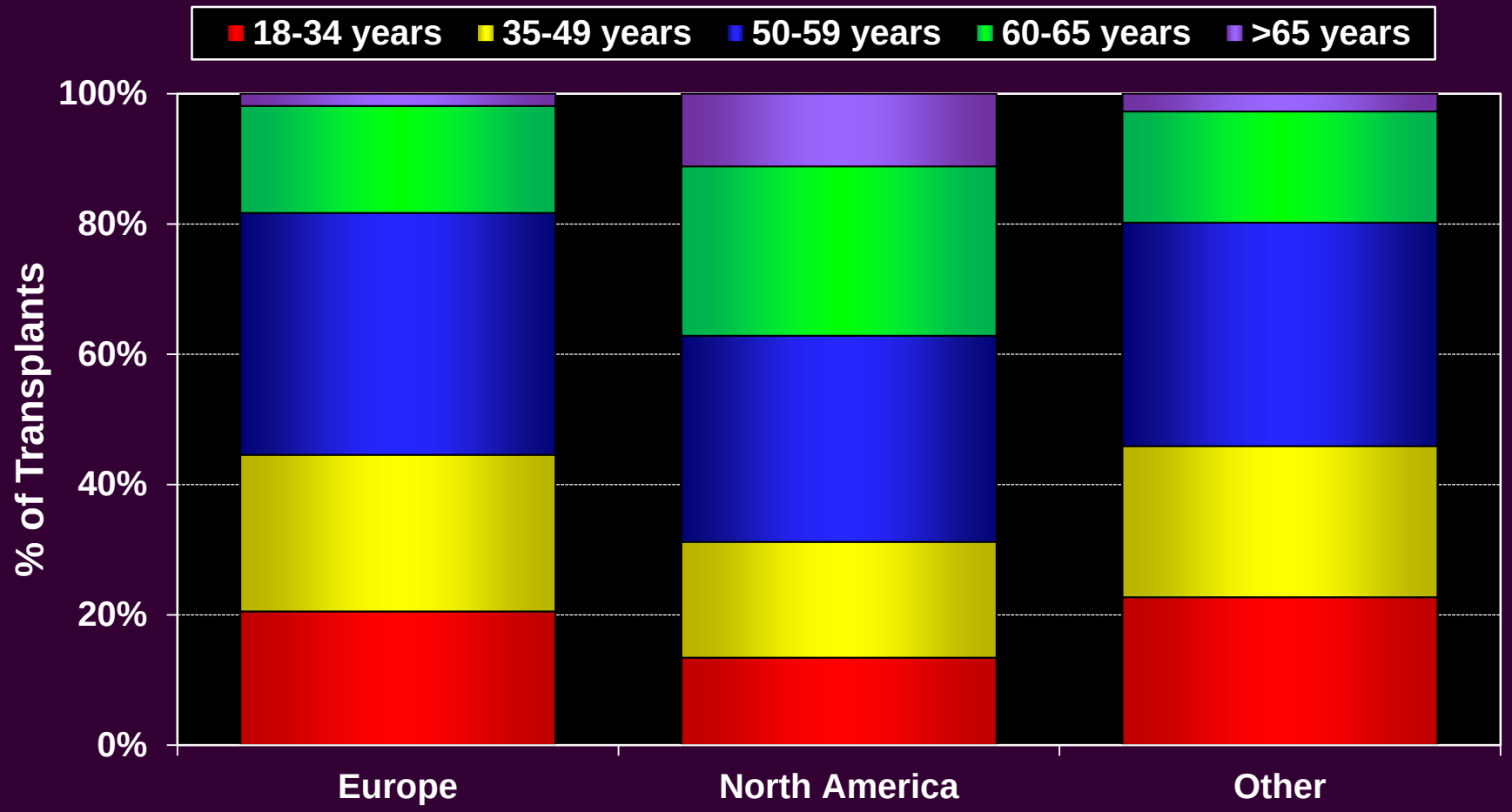
Adult Lung Transplants
Age Distribution By Location
(Transplants: January 2000 – June 2012)



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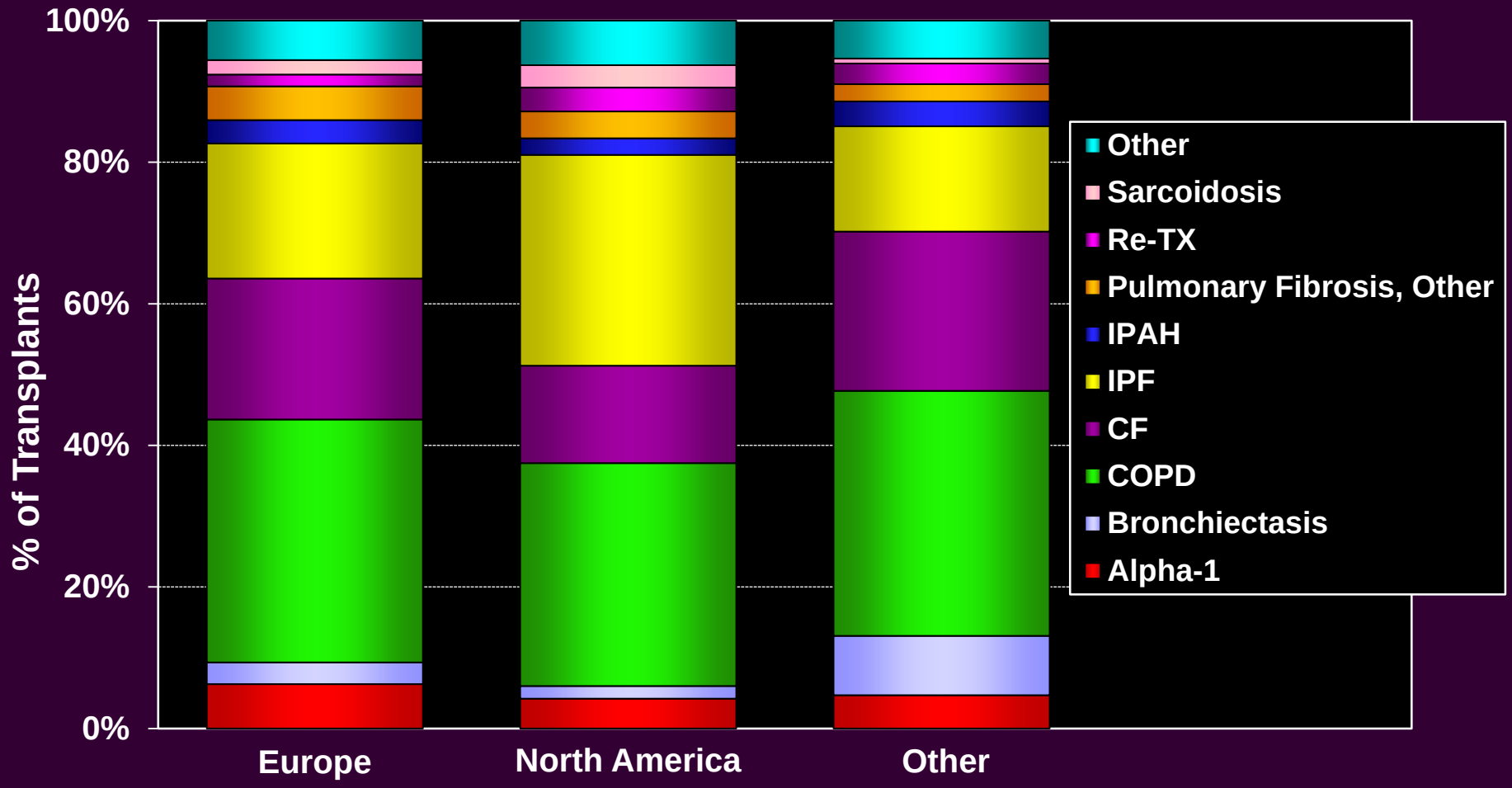
Adult Lung Transplants
Diagnosis Distribution By Location
(Transplants: January 2000 – June 2012)



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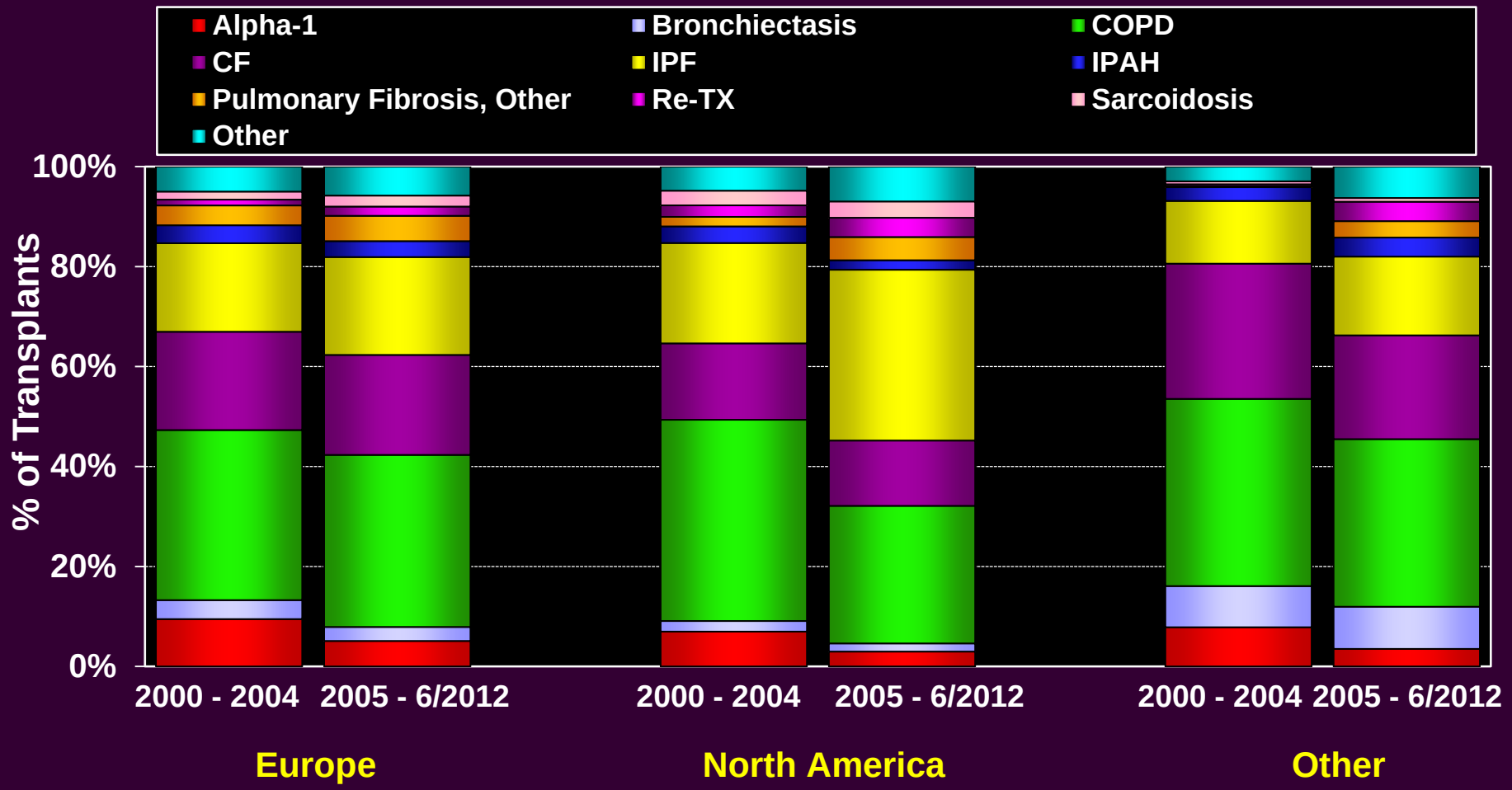
Adult Lung Transplants
Diagnosis Distribution By Location and Era
(Transplants: January 2000 – June 2012)



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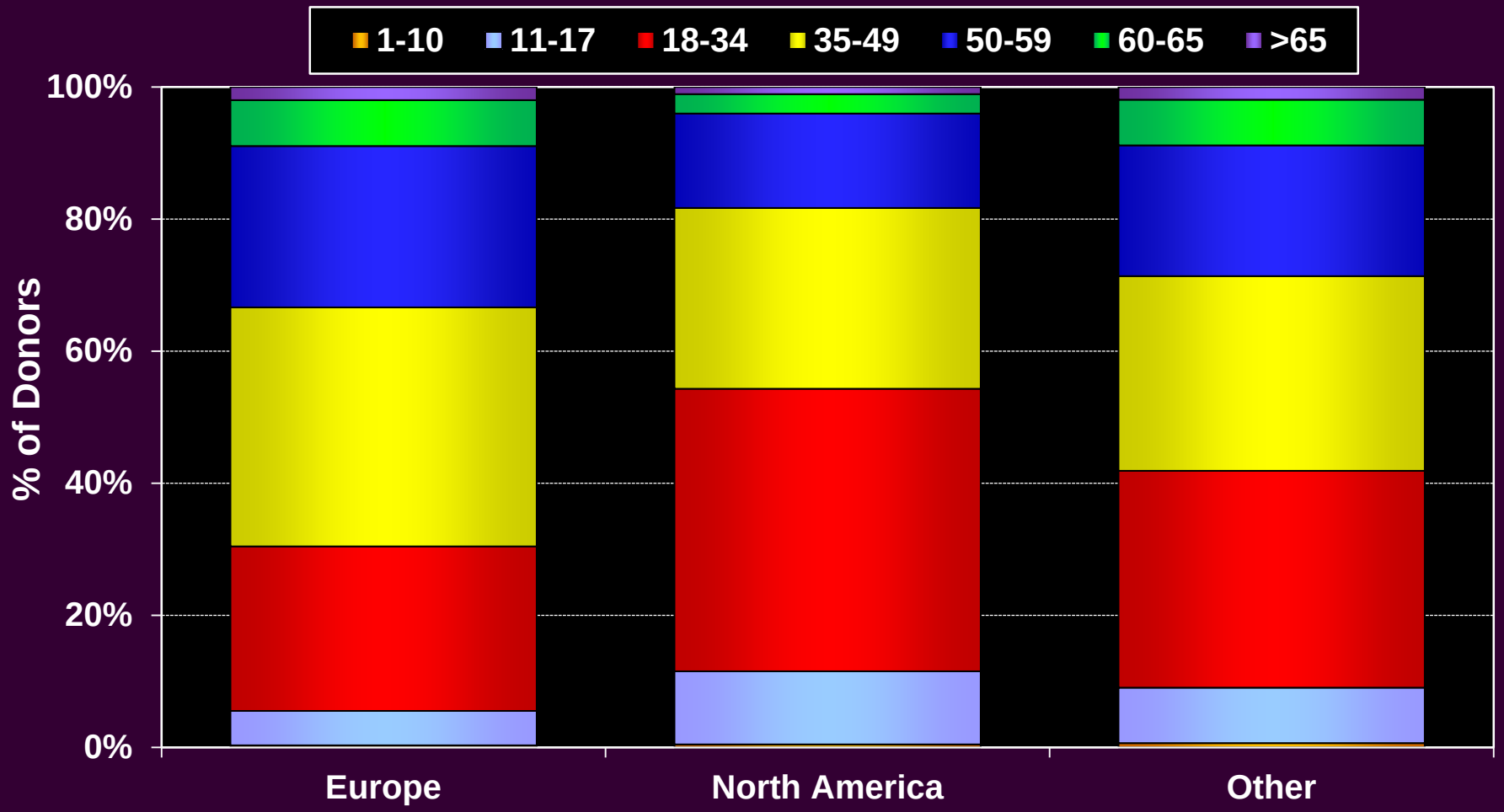
Adult Lung Transplants
Donor Age Distribution By Location
(Transplants: January 2000 – June 2012)



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Post-Transplant Survival and Rejection

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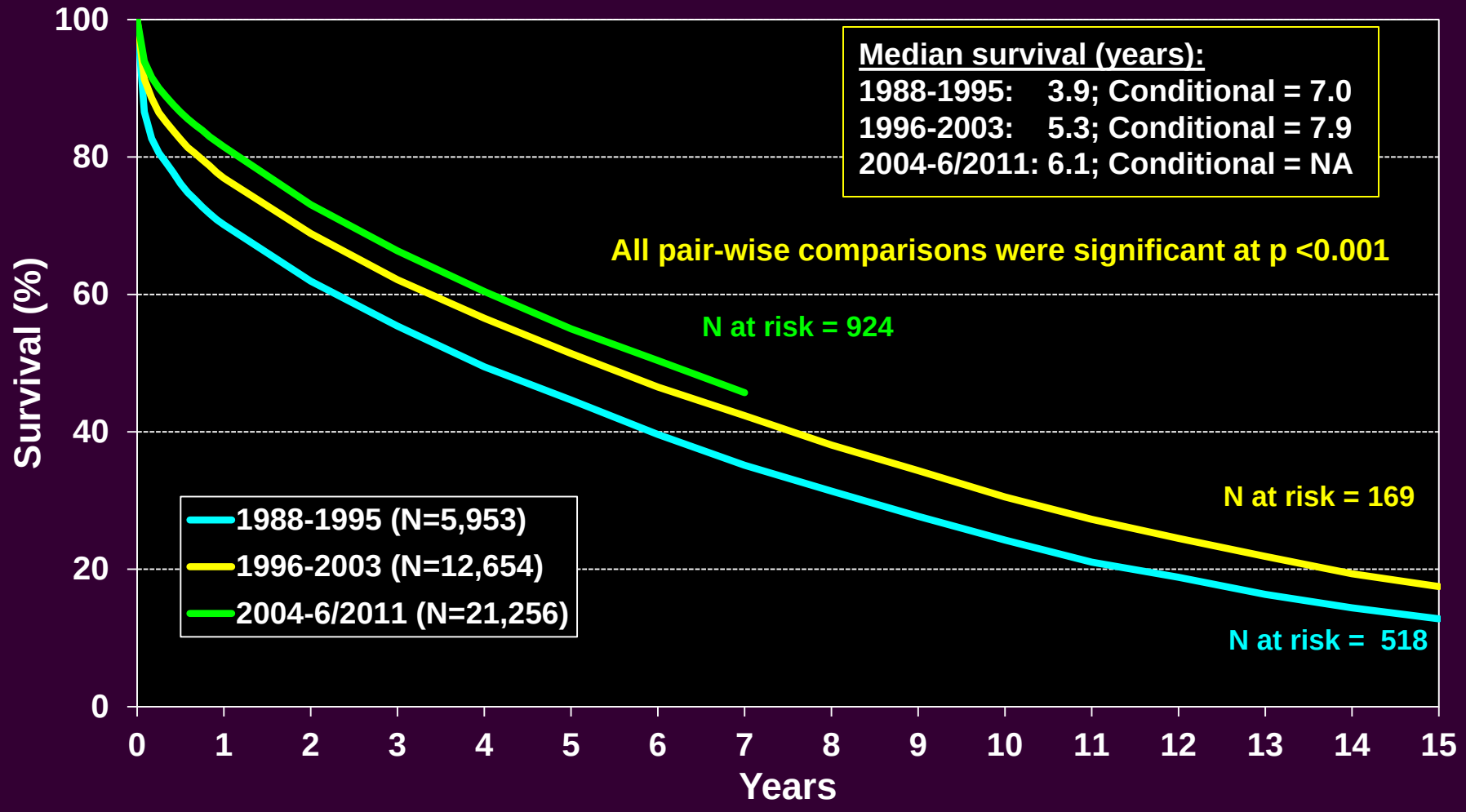
Adult Lung Transplants
Kaplan-Meier Survival by Era
(Transplants: January 1988 – June 2011)



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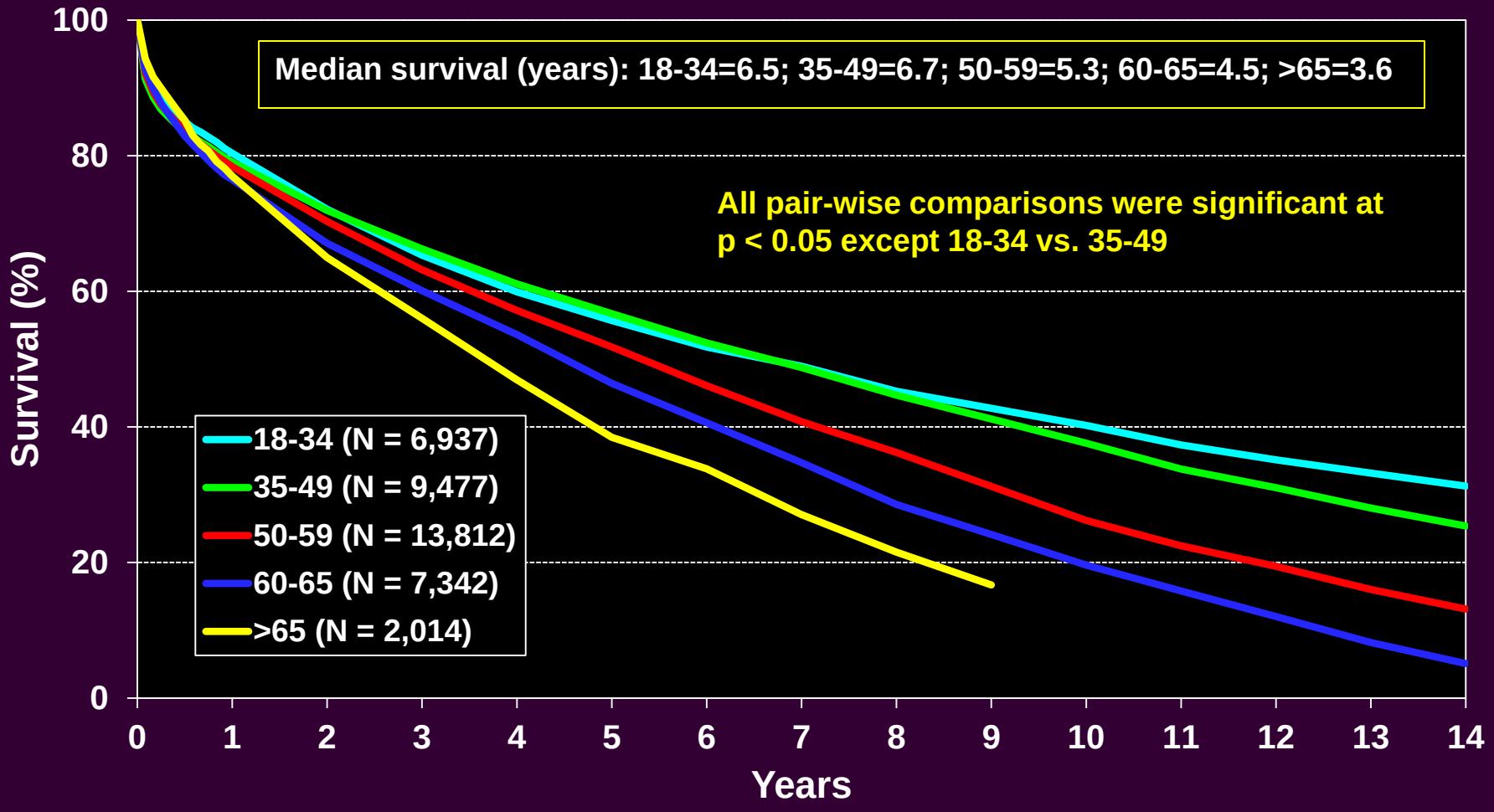
Adult Lung Transplants
Kaplan-Meier Survival by Age Group
(Transplants: January 1990 – June 2011)



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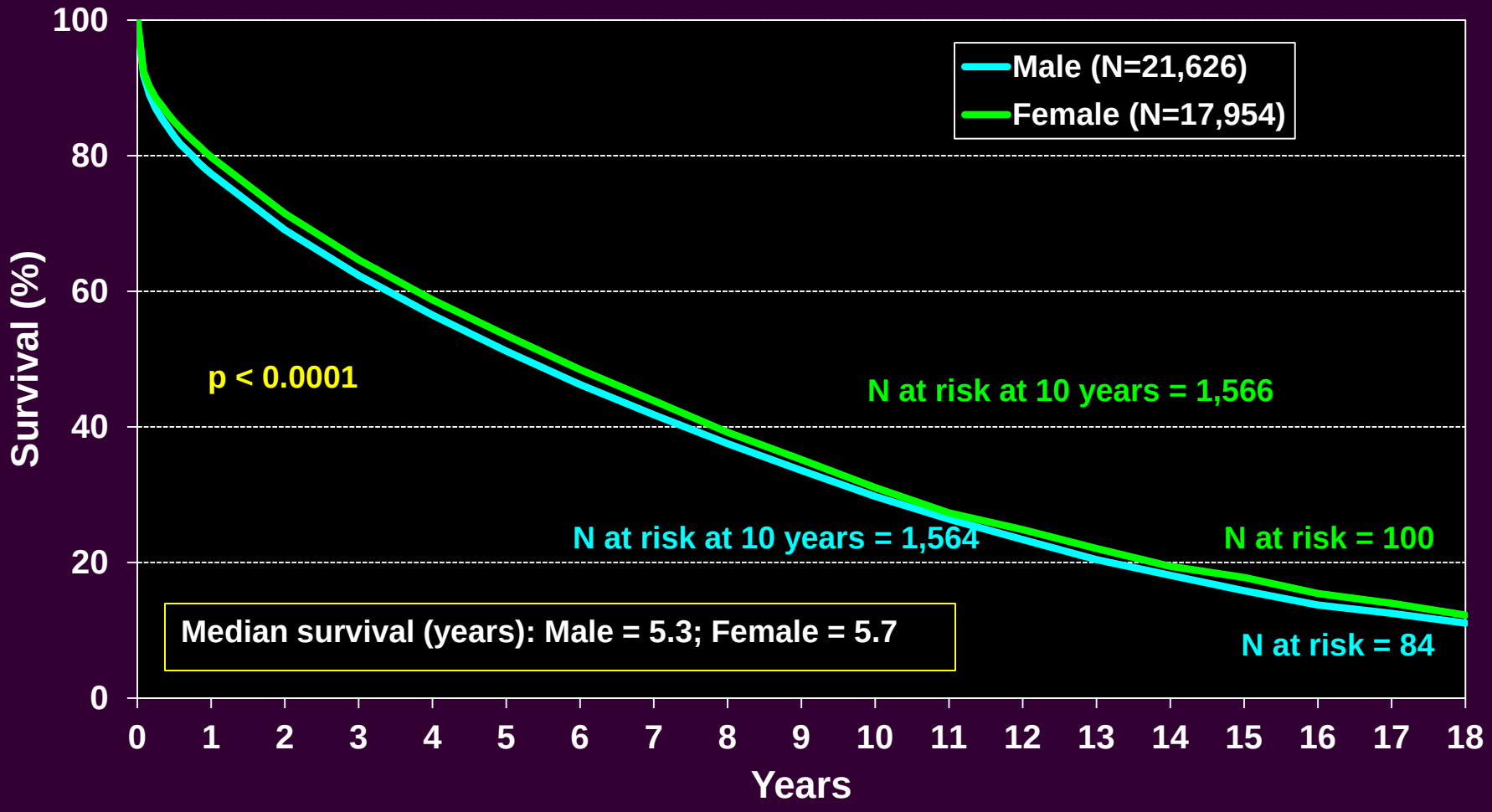
Adult Lung Transplants
Kaplan-Meier Survival by Gender
(Transplants: January 1990 – June 2011)



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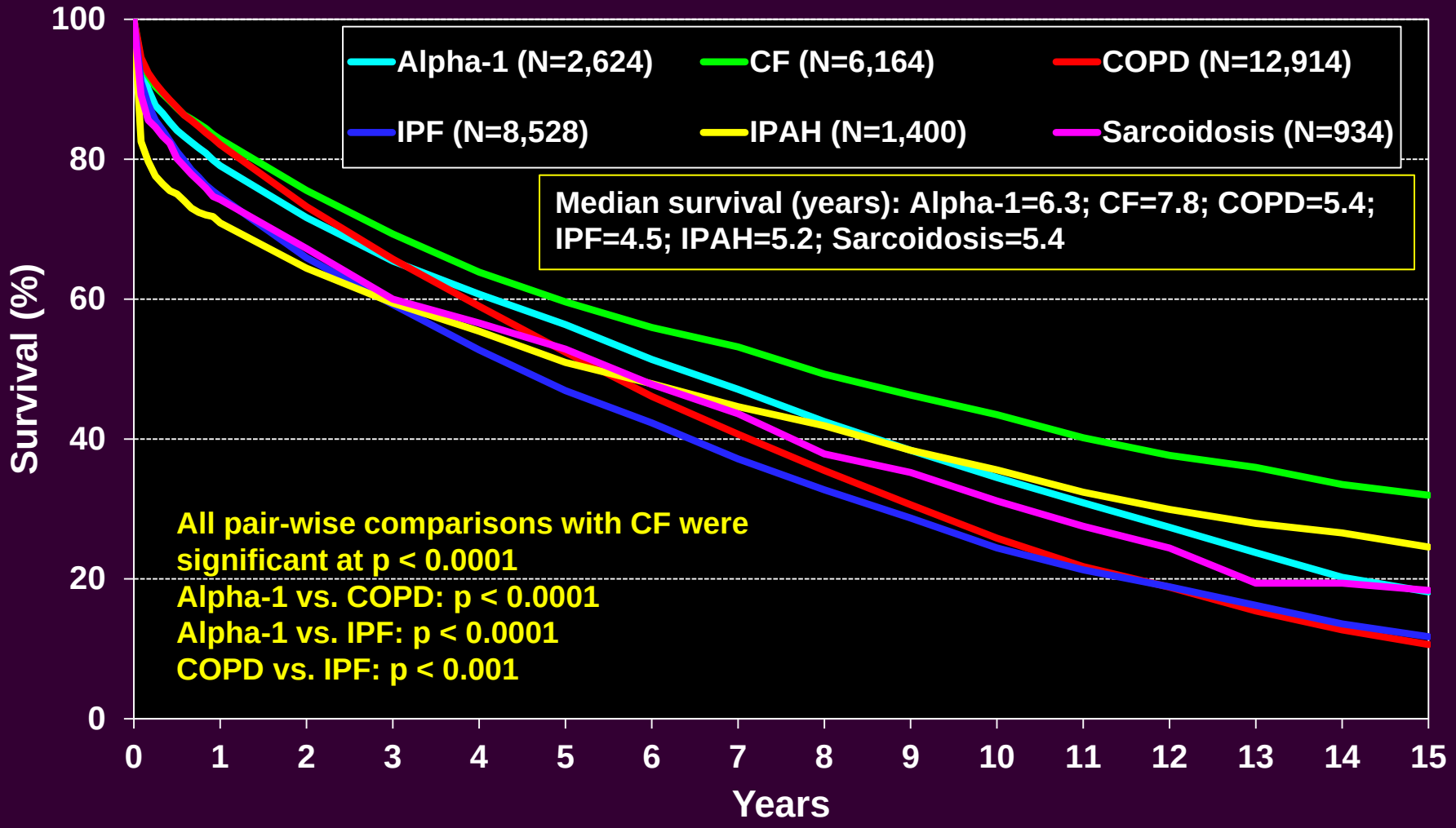
Adult Lung Transplants
Kaplan-Meier Survival by Diagnosis
(Transplants: January 1990 – June 2011)



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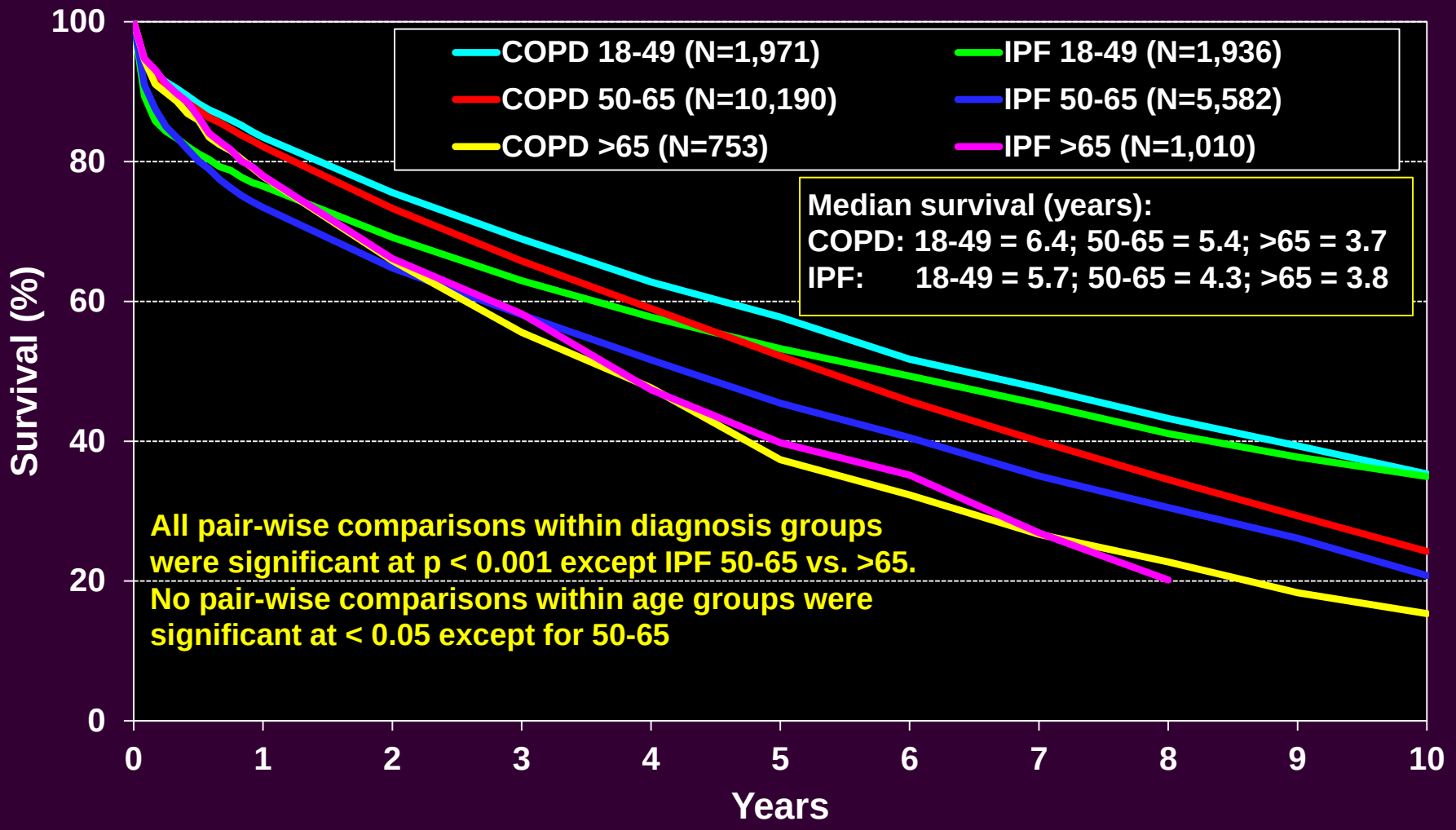
Adult Lung Transplants
Kaplan-Meier Survival by Diagnosis and Age Group
(Transplants: January 1990 – June 2011)



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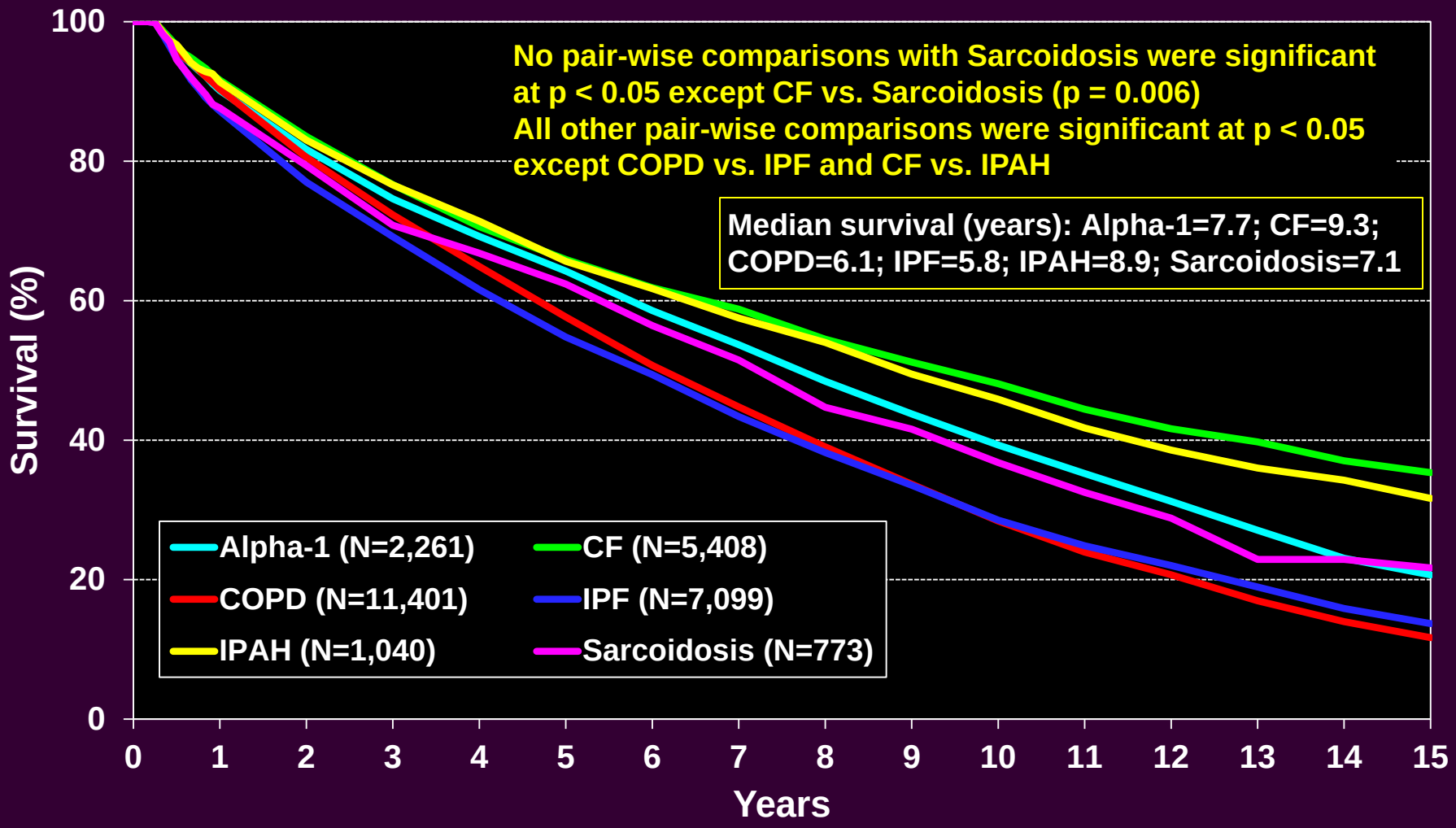
Adult Lung Transplants

Kaplan-Meier Survival by Diagnosis Conditional on Survival to 3 Months (Transplants: January 1990 – June 2011)



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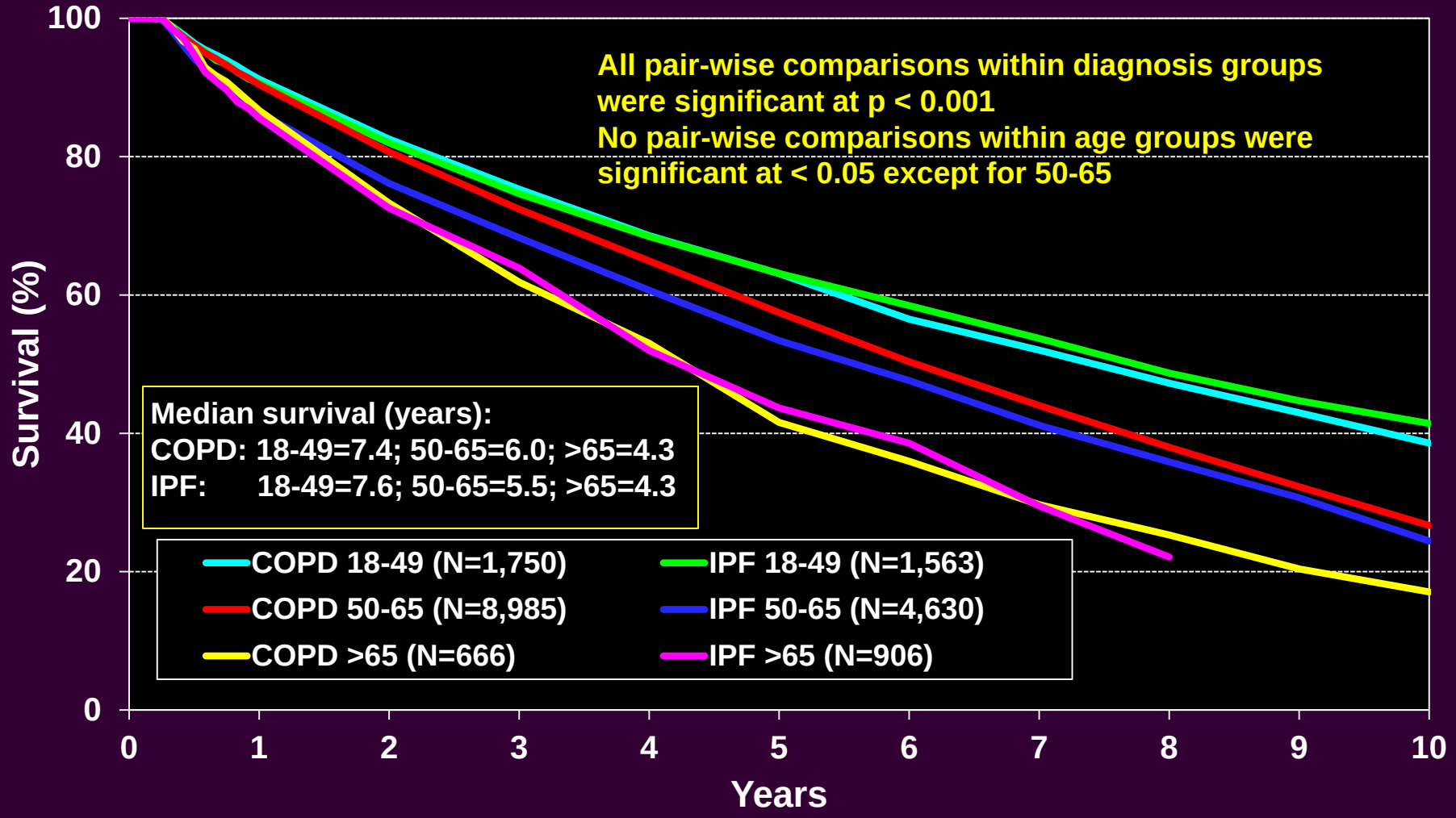
Adult Lung Transplants

Kaplan-Meier Survival by Diagnosis and Age Group Conditional on Survival to 3 Months (Transplants: January 1990 – June 2011)



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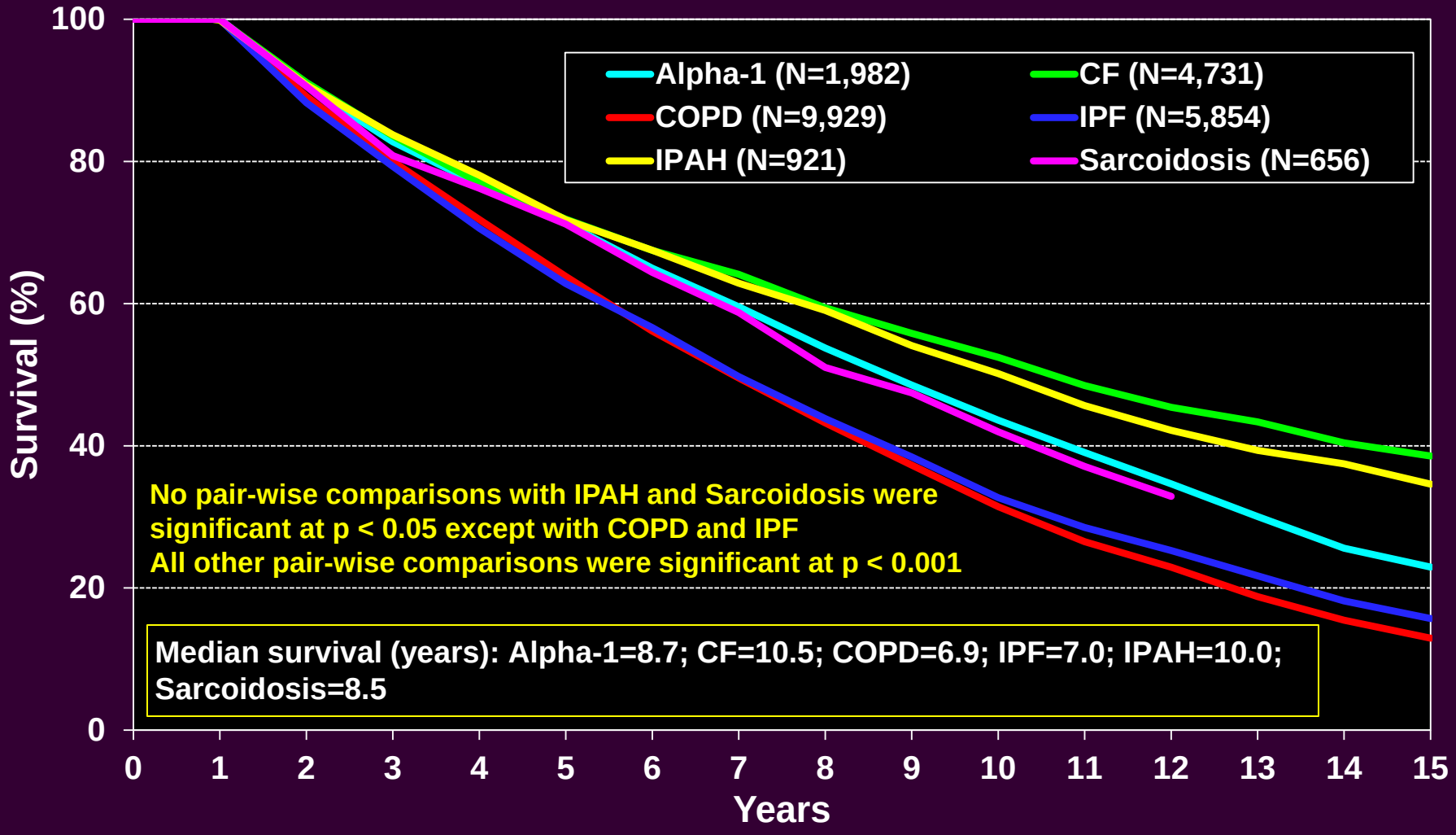
Adult Lung Transplants

Kaplan-Meier Survival by Diagnosis Conditional on Survival to 1 Year (Transplants: January 1990 – June 2011)



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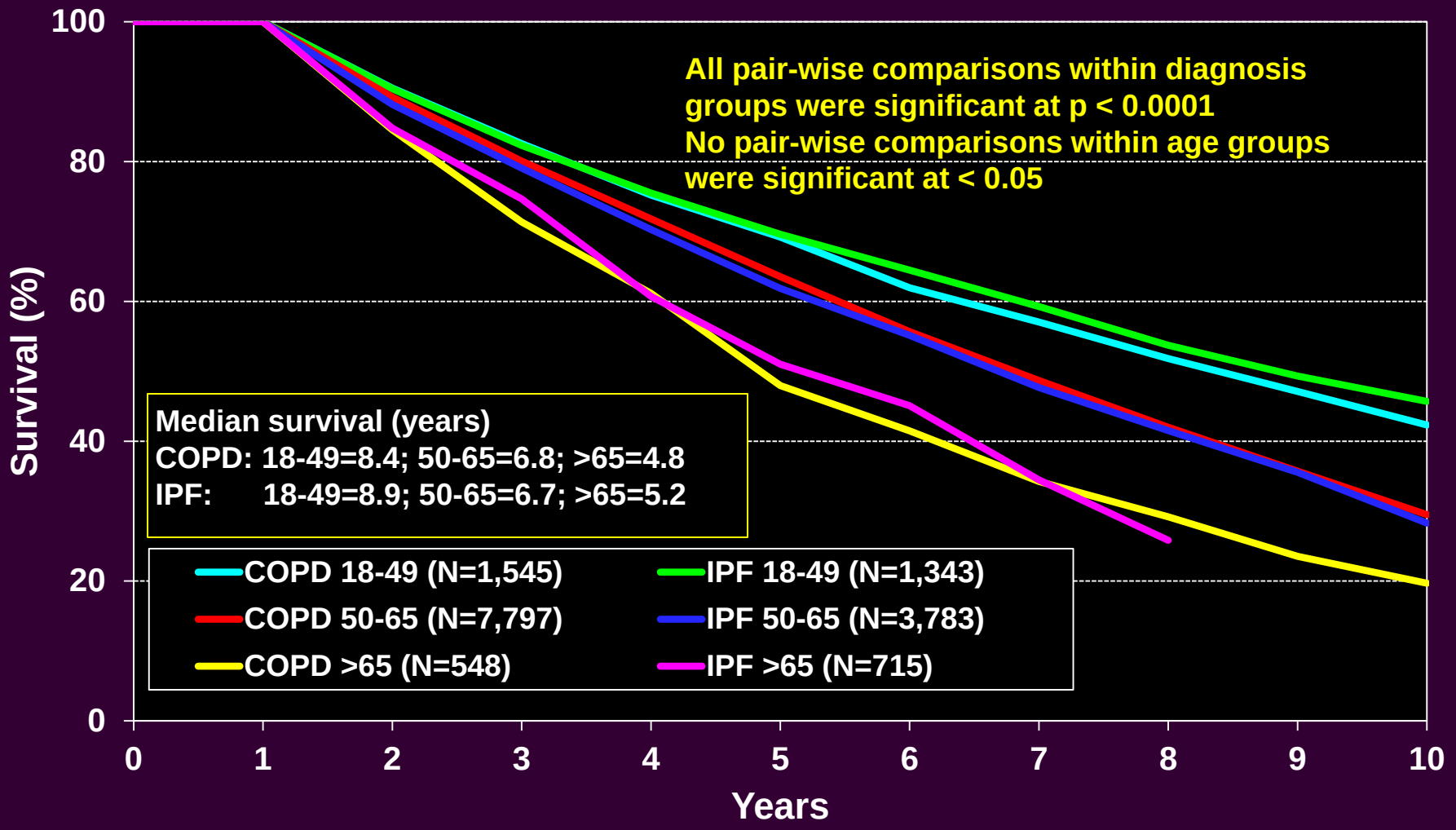
Adult Lung Transplants

Kaplan-Meier Survival by Diagnosis and Age Group Conditional on Survival to 1 Year (Transplants: January 1990 – June 2011)



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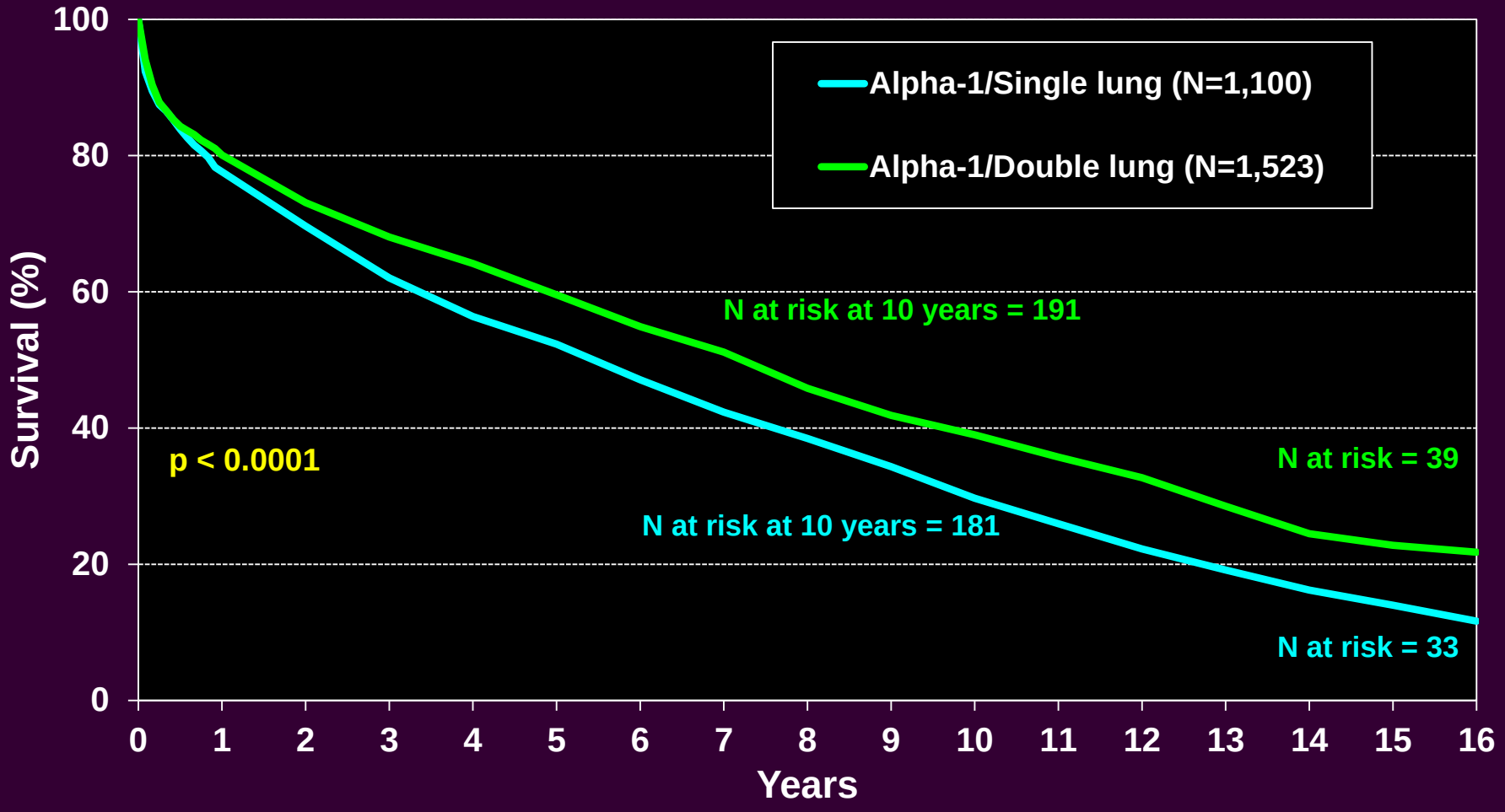
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: Alpha-1 Antitrypsin Deficiency



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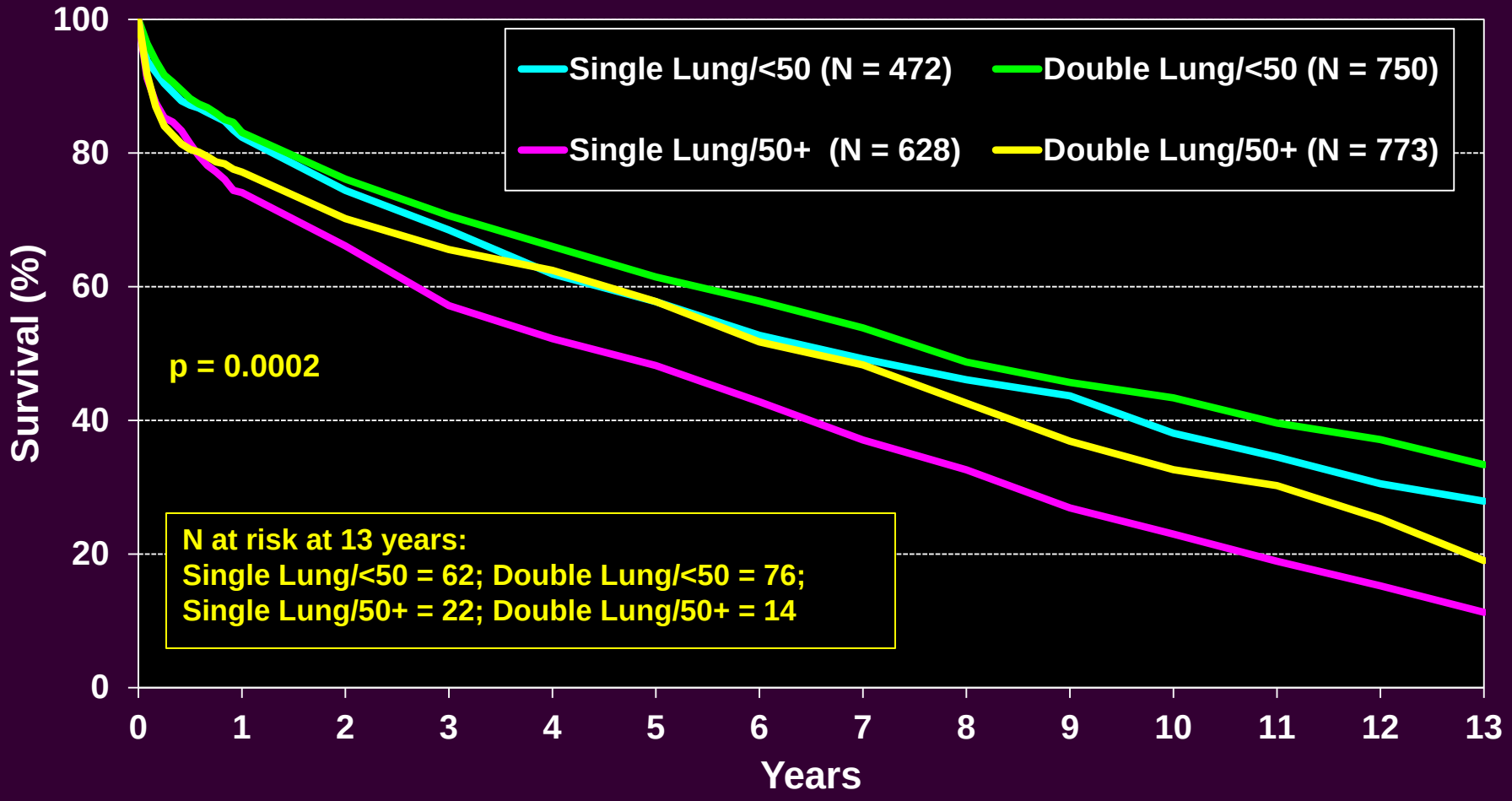
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: Alpha-1 Antitrypsin Deficiency



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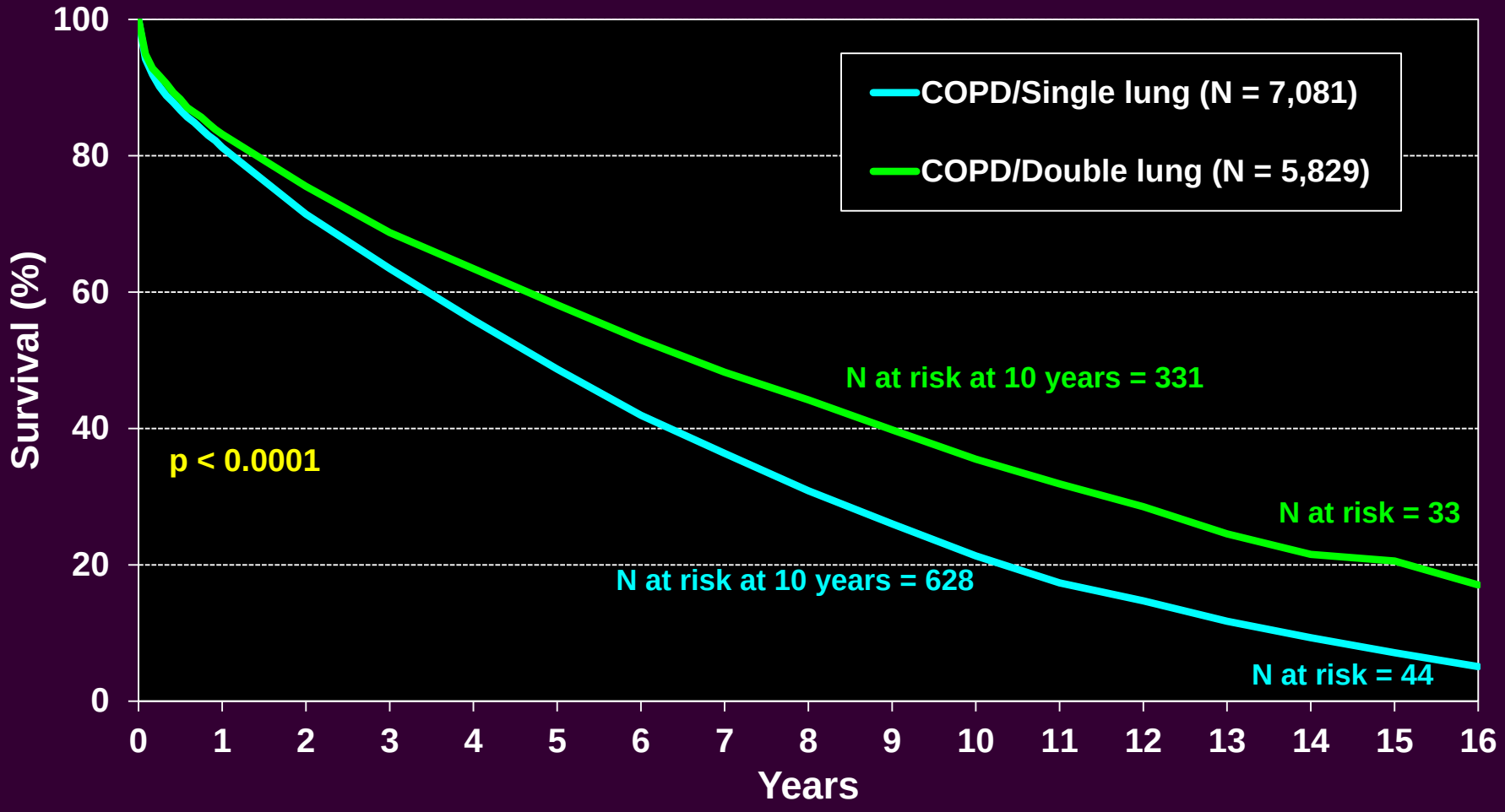
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: COPD/Emphysema



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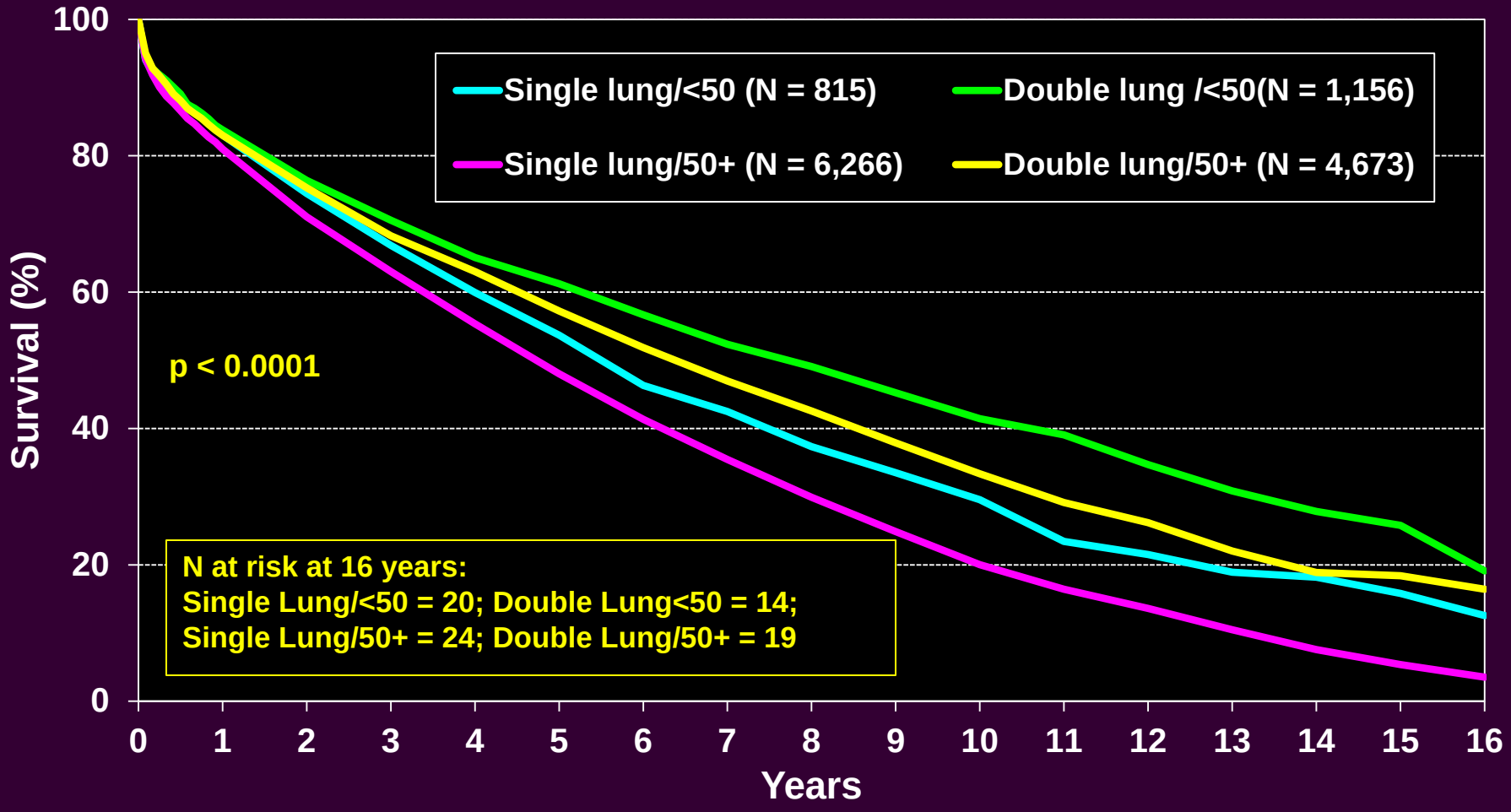
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: COPD/Emphysema



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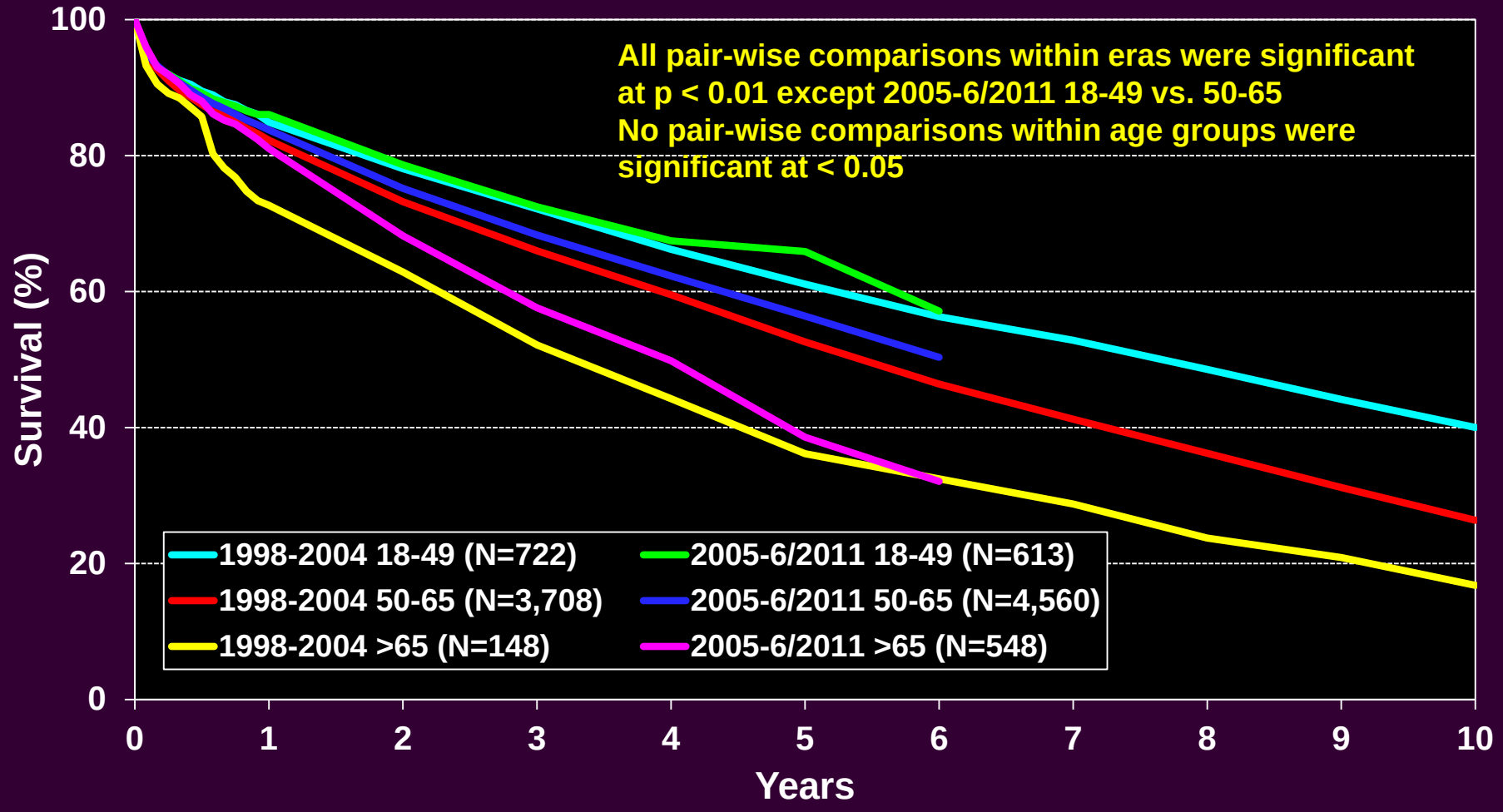
Adult Lung Transplants

Kaplan-Meier Survival by Era and Age Group

(Transplants: January 1998 – June 2011)

Diagnosis: COPD/Emphysema



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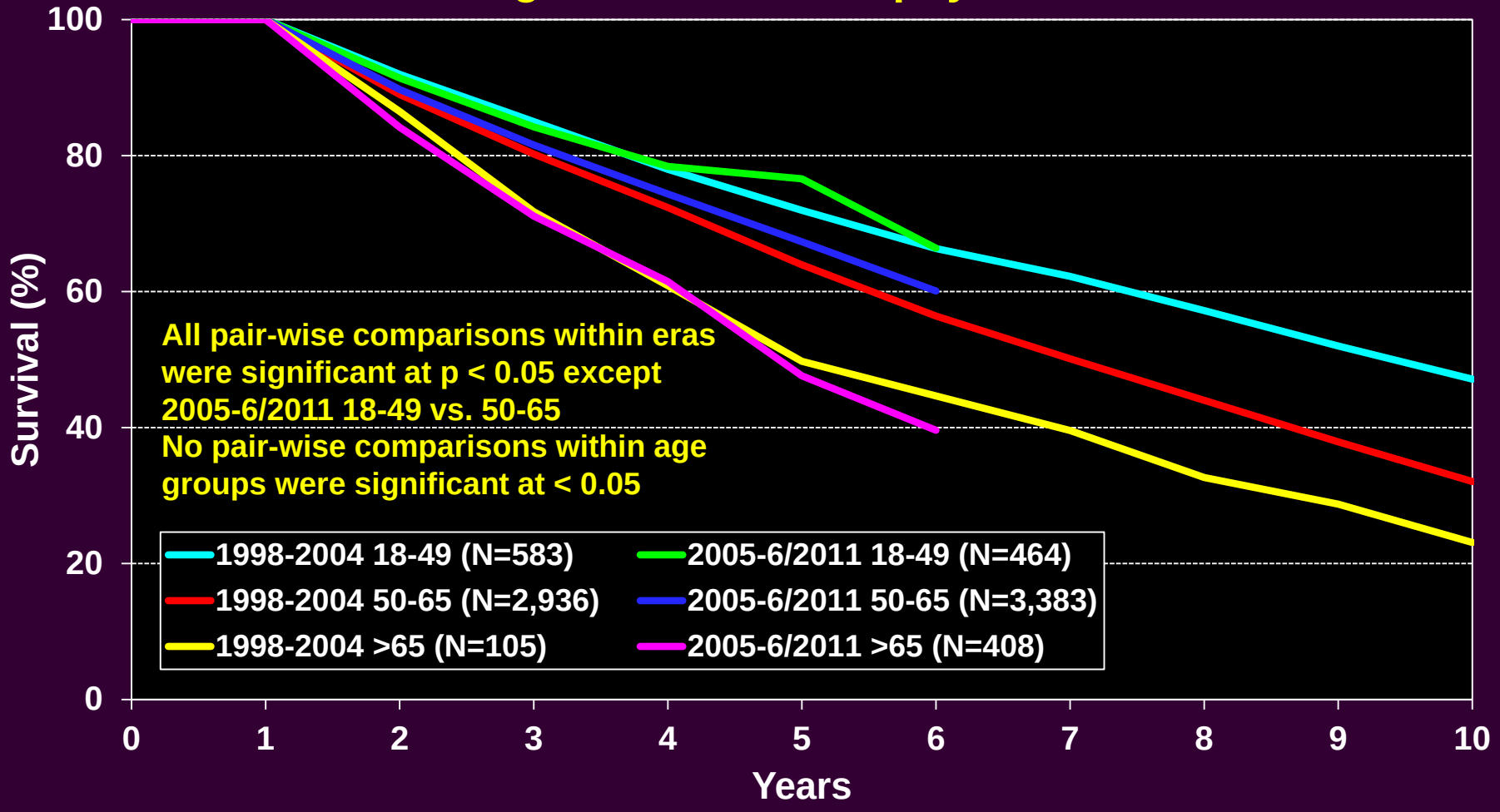
Adult Lung Transplants

Kaplan-Meier Survival by Era and Age Group Conditional on Survival to 1 Year (Transplants: January 1998 – June 2011)

Diagnosis: COPD/Emphysema



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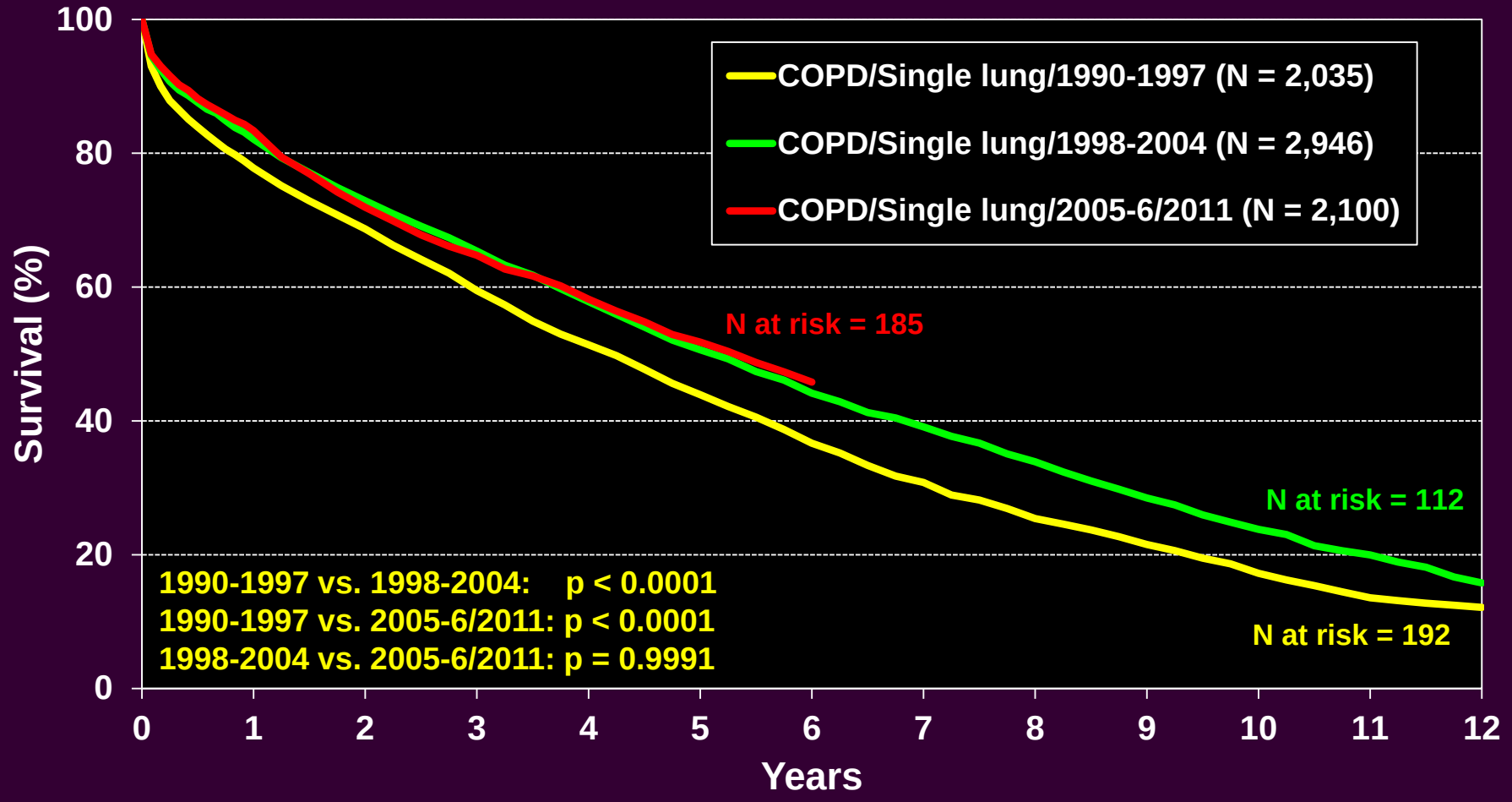
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type and Era
(Transplants: January 1990 – June 2011)
Diagnosis: COPD/Emphysema, Single Lung



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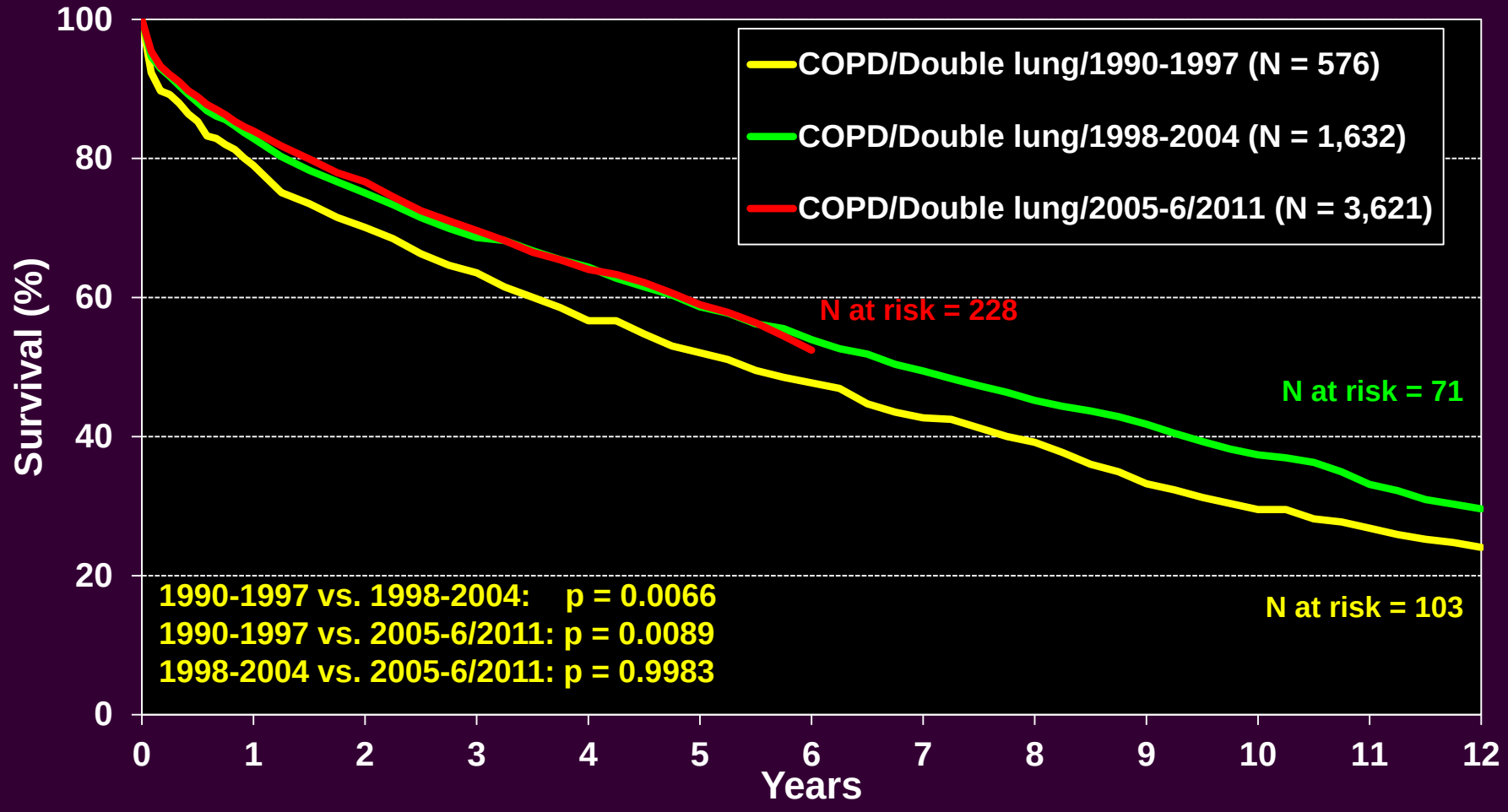
Adult Lung Transplants

Kaplan-Meier Survival By Procedure Type and Era

(Transplants: January 1990 – June 2011)

Diagnosis: COPD/Emphysema, Double Lung



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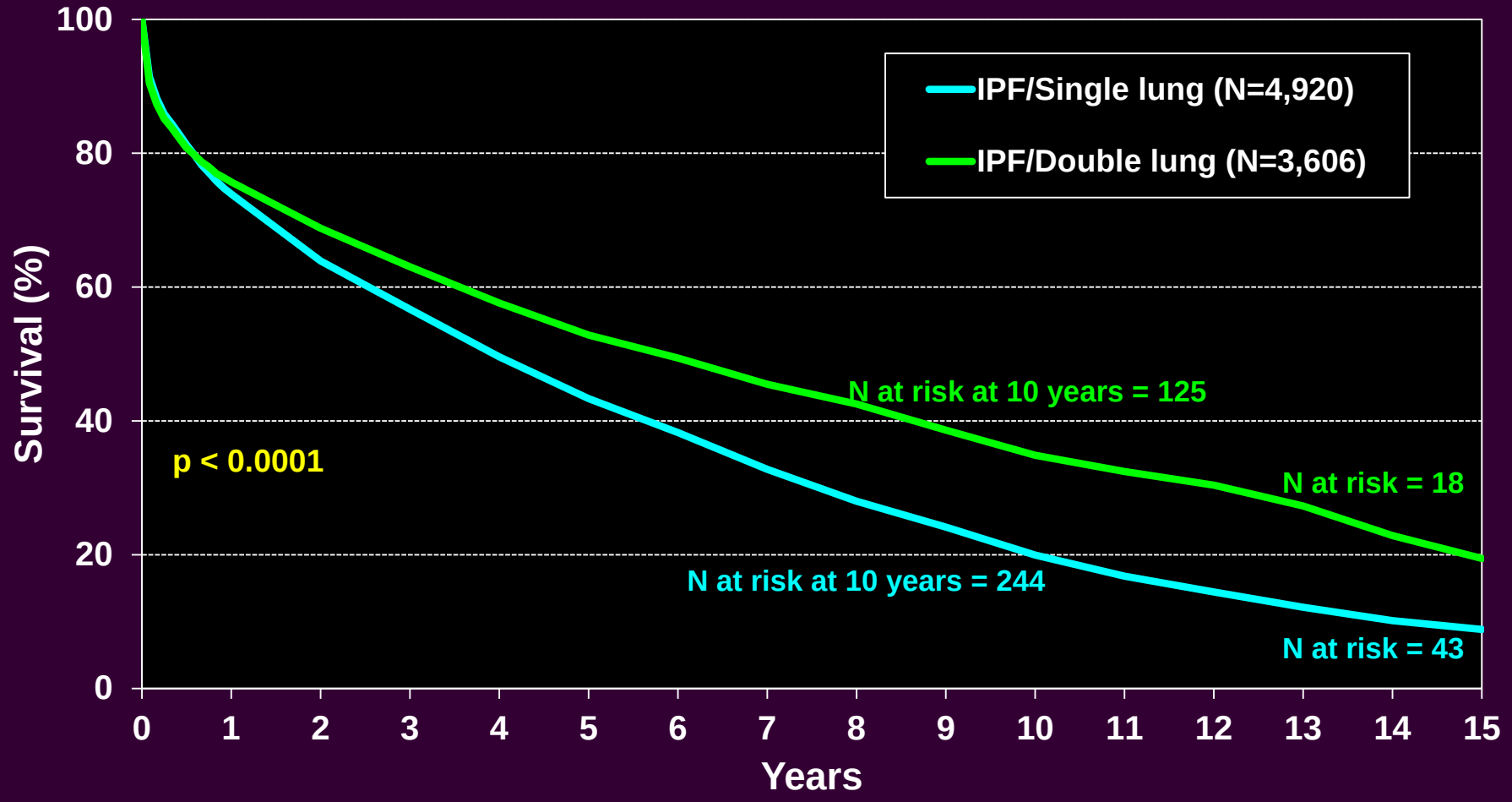
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: Idiopathic Pulmonary Fibrosis



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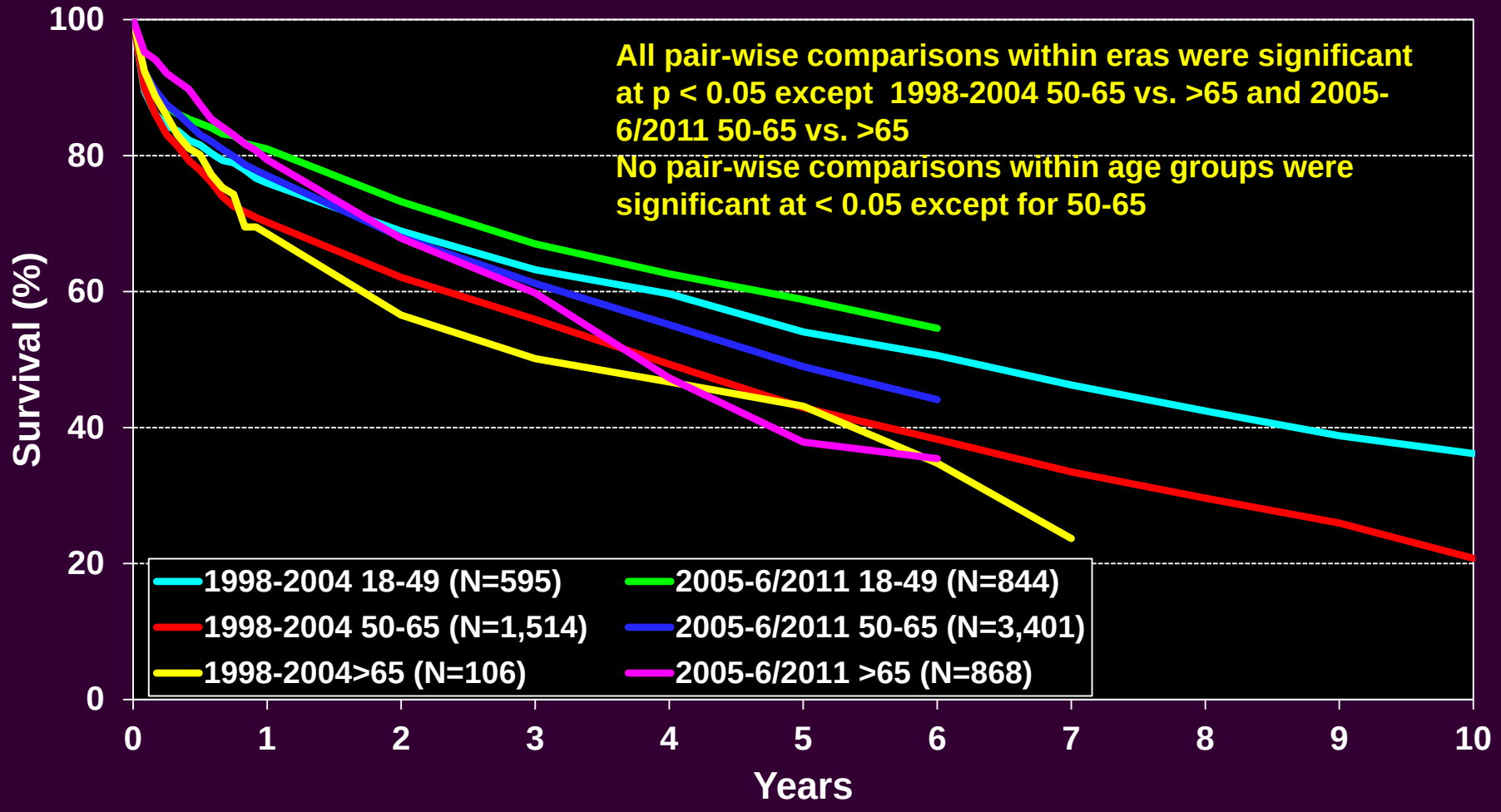
Adult Lung Transplants

Kaplan-Meier Survival by Era and Age Group

(Transplants: January 1998 – June 2011)

Diagnosis: Idiopathic Pulmonary Fibrosis



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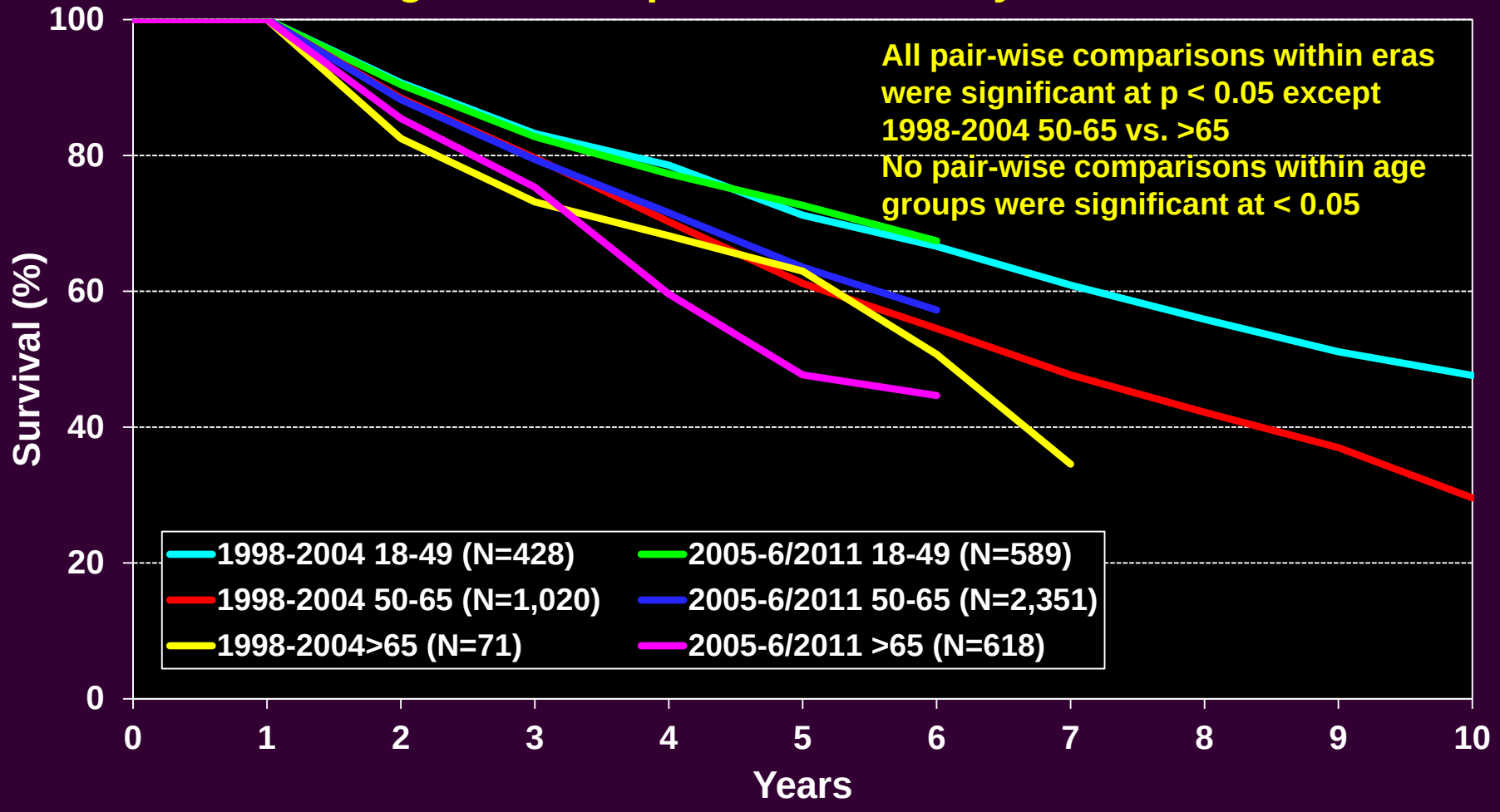
Adult Lung Transplants

Kaplan-Meier Survival by Era and Age Group Conditional on Survival to 1 Year (Transplants: January 1998 – June 2011)

Diagnosis: Idiopathic Pulmonary Fibrosis



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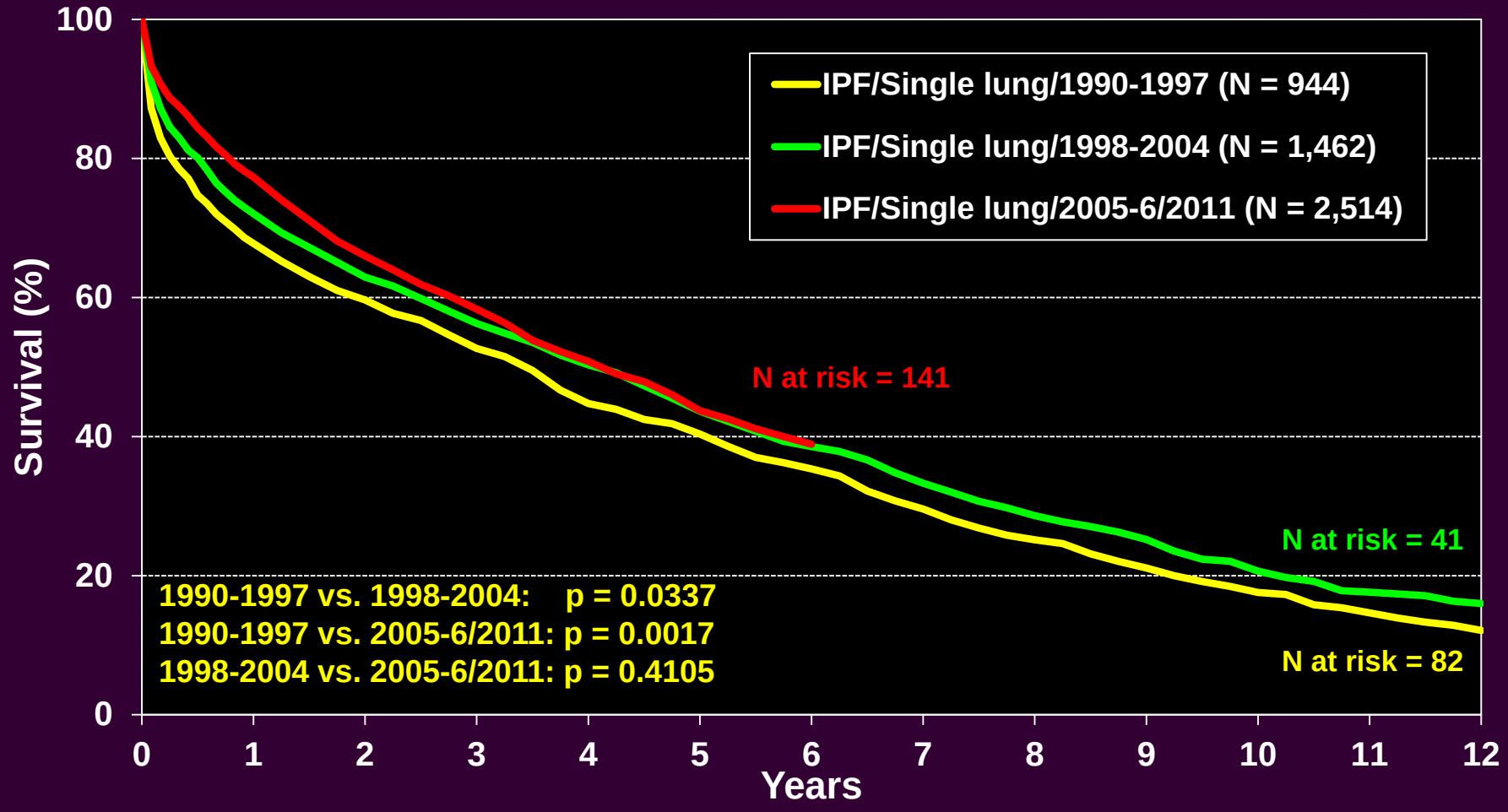
Adult Lung Transplants

Kaplan-Meier Survival By Procedure Type and Era

(Transplants: January 1990 – June 2011)

Diagnosis: Idiopathic Pulmonary Fibrosis, Single Lung



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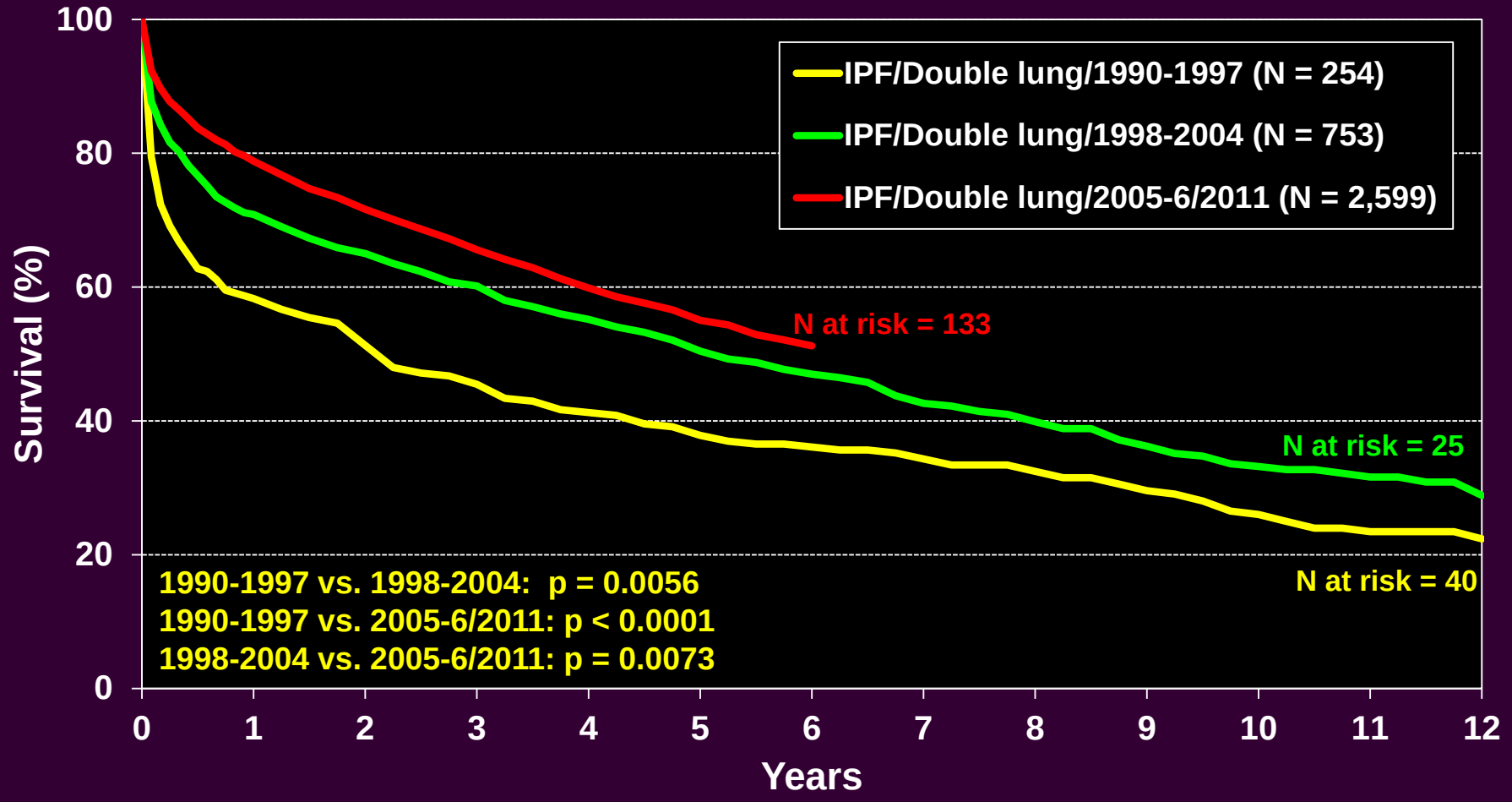
Adult Lung Transplants

Kaplan-Meier Survival By Procedure Type and Era

(Transplants: January 1990 – June 2011)

Diagnosis: Idiopathic Pulmonary Fibrosis, Double Lung



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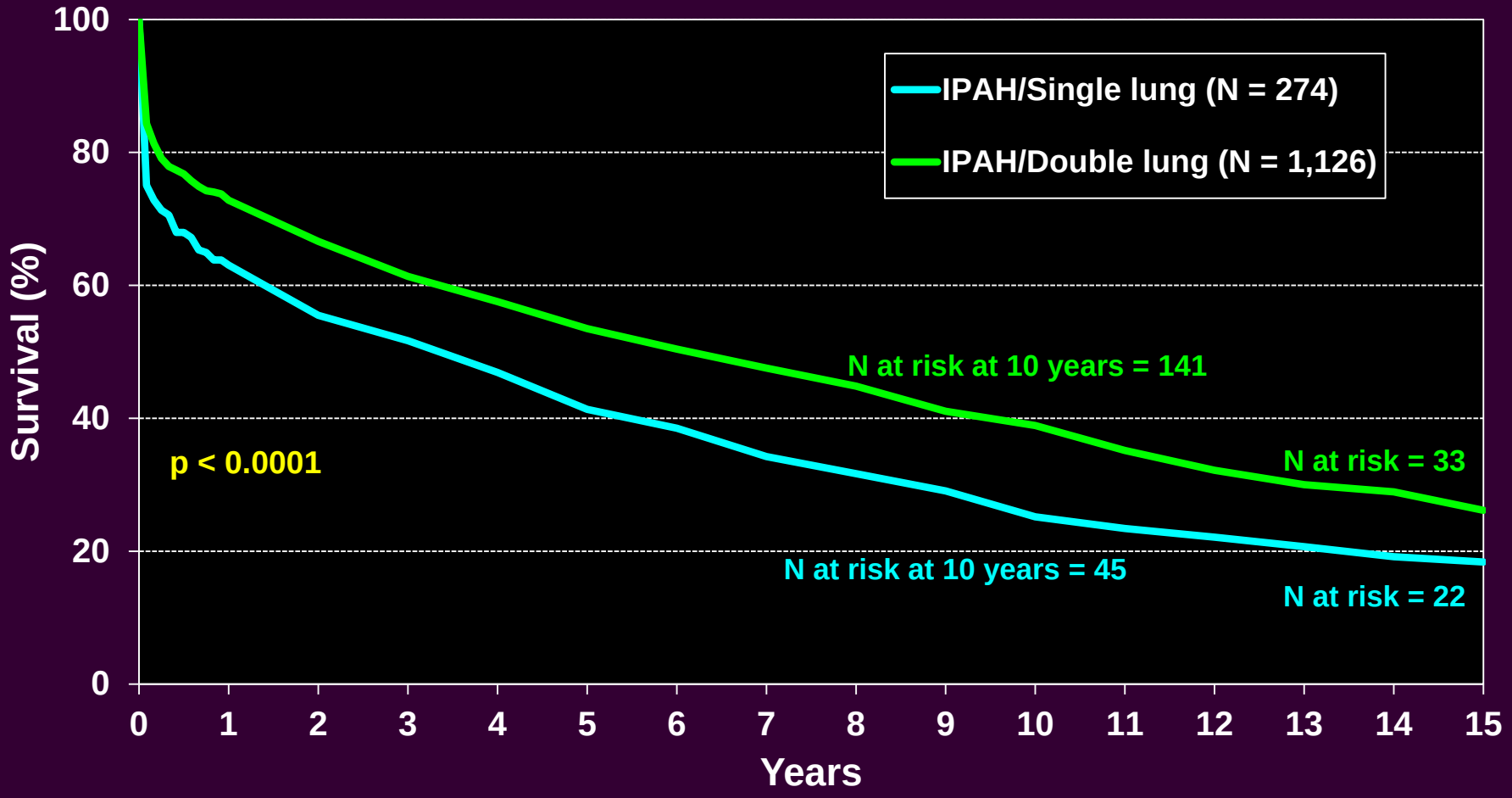
Adult Lung Transplants
Kaplan-Meier Survival By Procedure Type
(Transplants: January 1990 – June 2011)
Diagnosis: Idiopathic Arterial Pulmonary Hypertension



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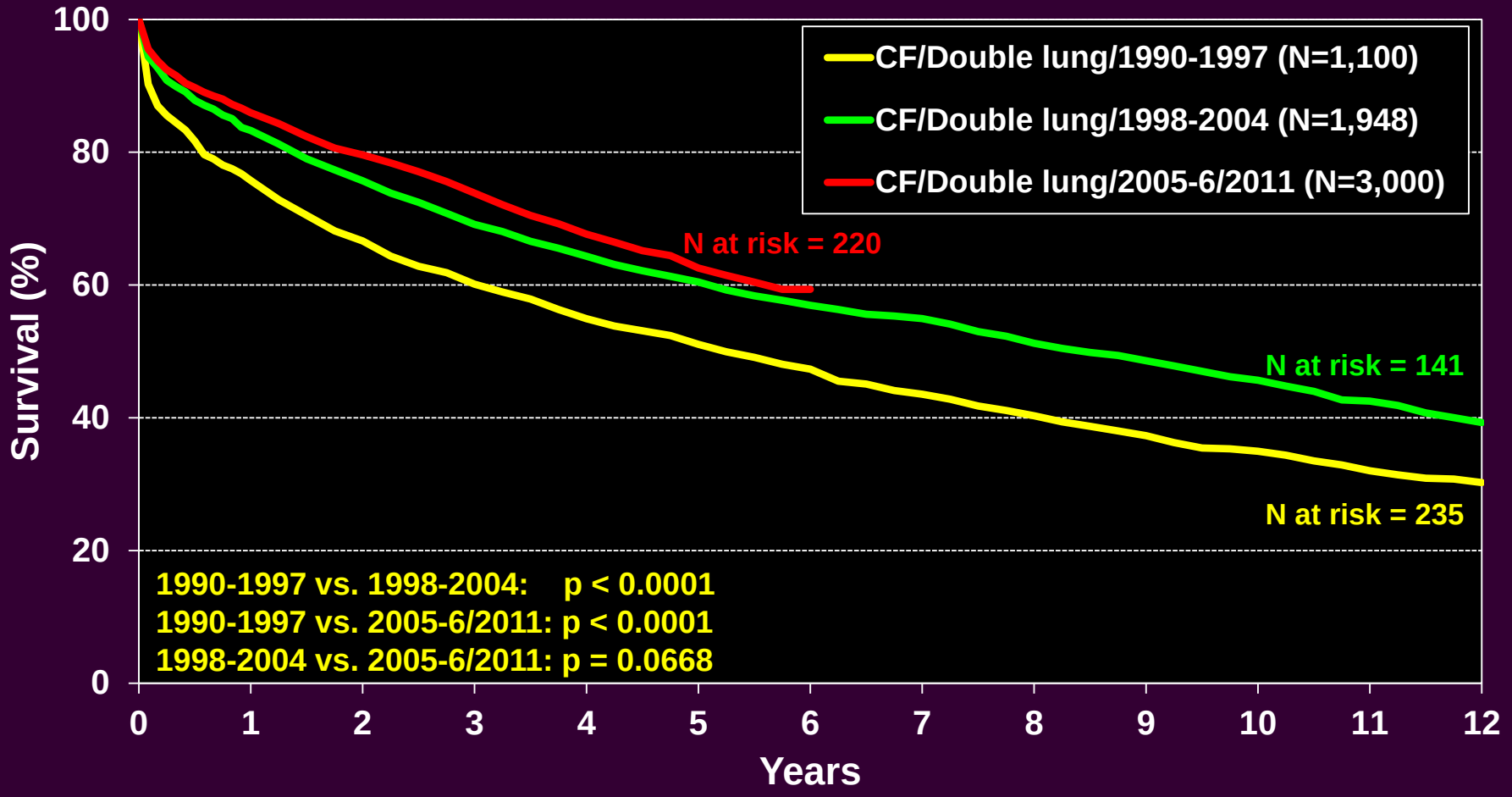
Adult Lung Transplants

Kaplan-Meier Survival By Procedure Type and Era

(Transplants: January 1990 – June 2011)

Diagnosis: Cystic Fibrosis, Double Lung



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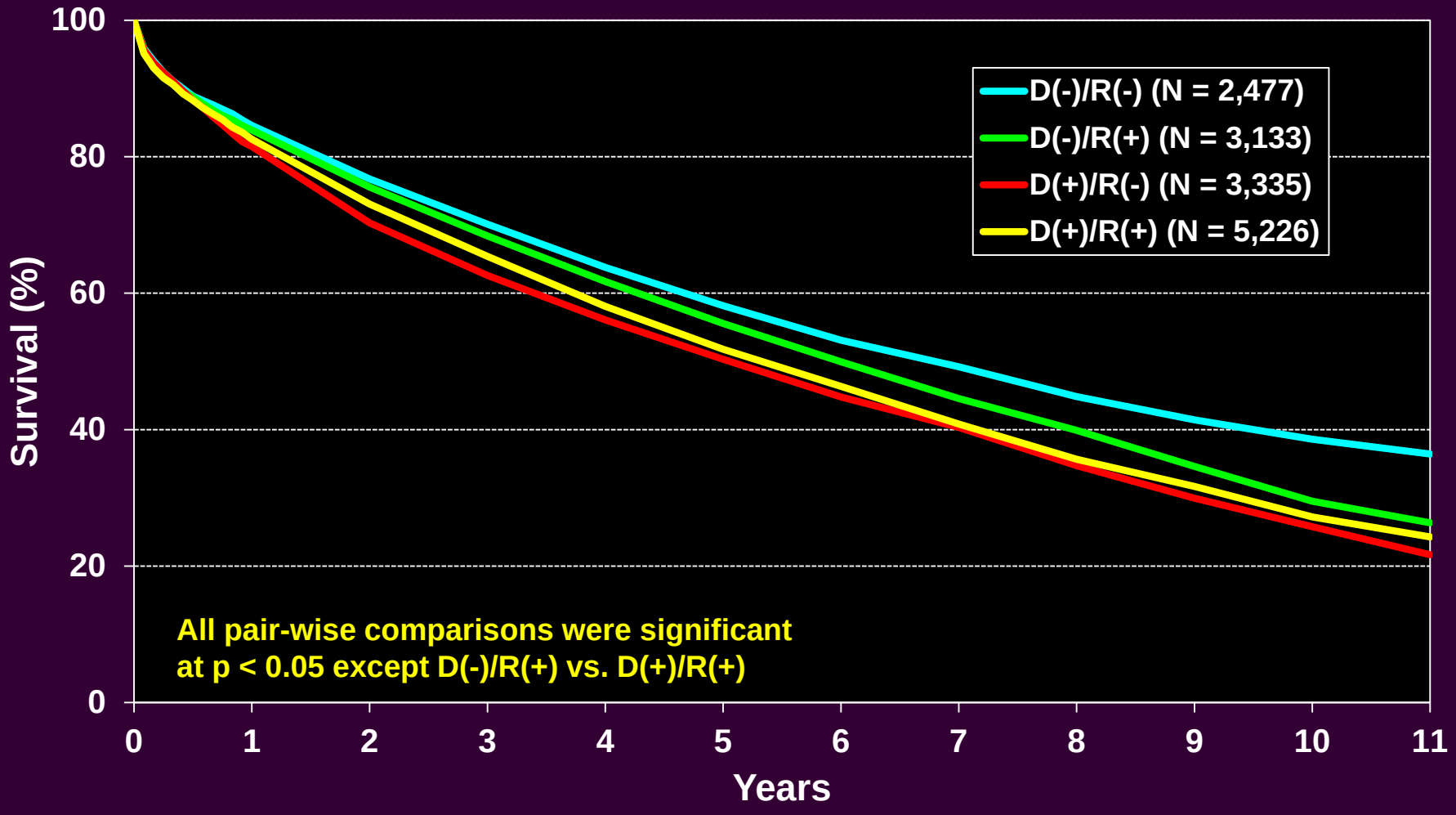
Adult Lung Transplants

Kaplan-Meier Survival by Donor/Recipient CMV Status

(Transplants: October 1999 – June 2011)



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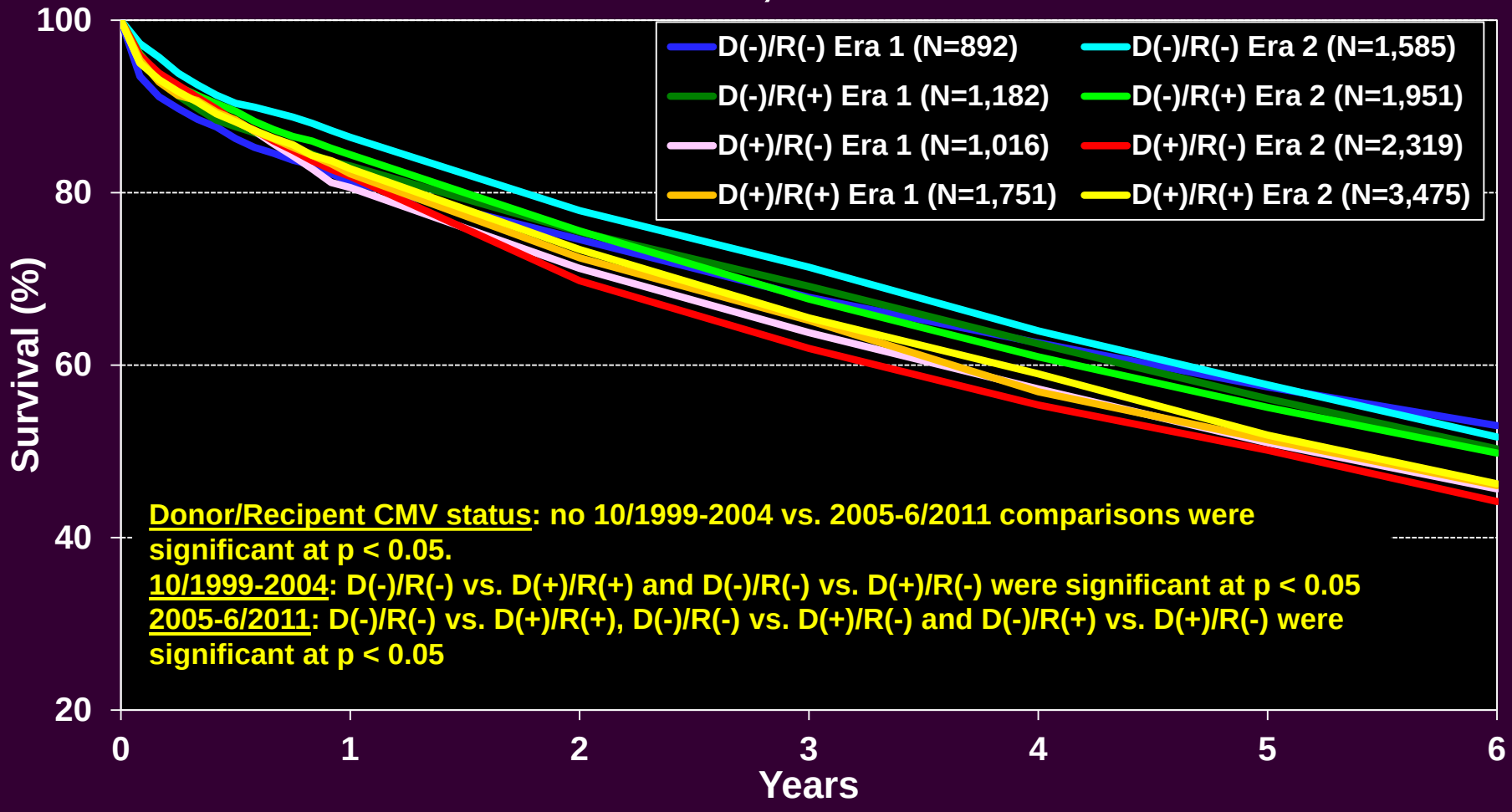
Adult Lung Transplants

Kaplan-Meier Survival by Donor/Recipient CMV Status and Era (Transplants: October 1999 – June 2011)

Era 1 = 10/1999-2004; Era 2 = 2005-6/2011



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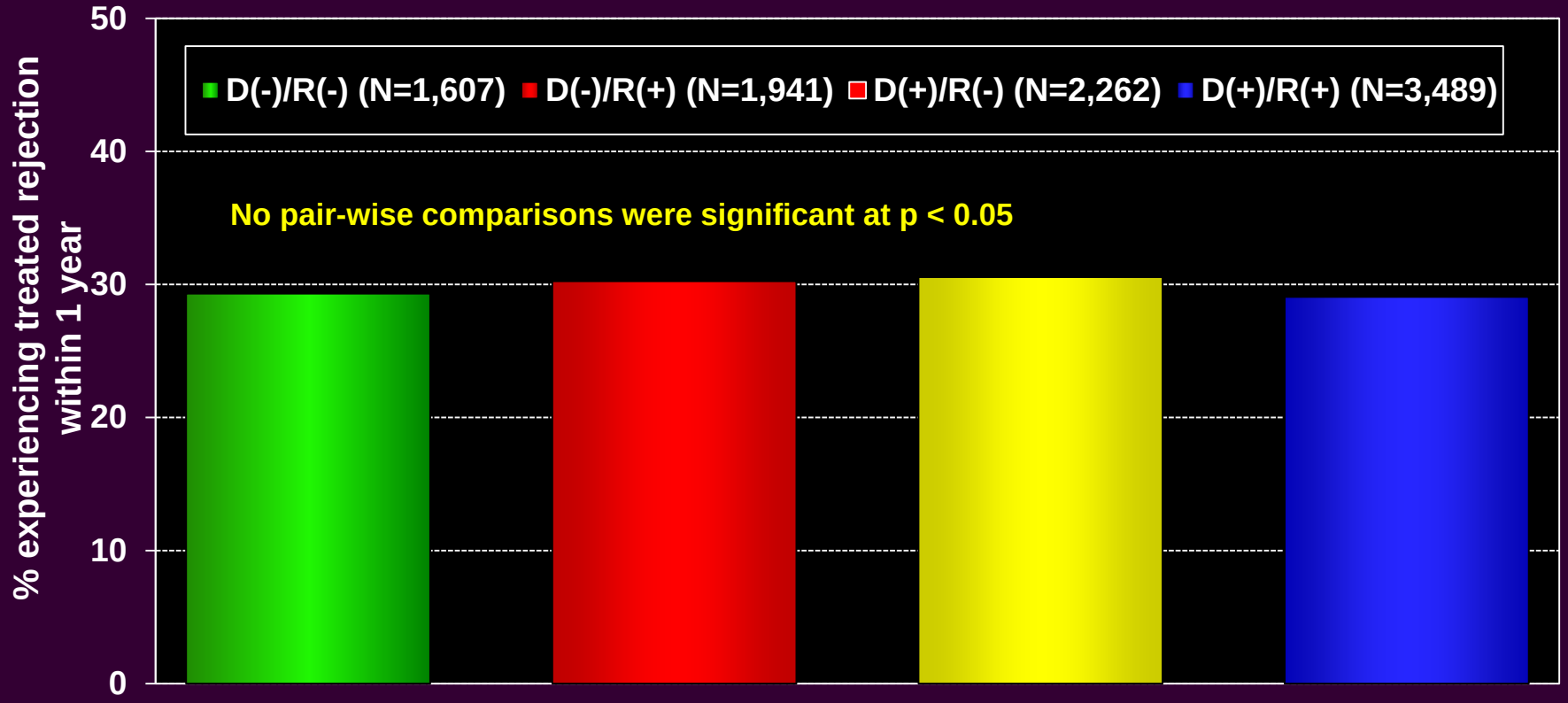
Adult Lung Transplants

Percentage Experiencing *Treated* Rejection between Discharge and 1-Year Follow-Up by Donor/Recipient CMV Status

(Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

Treated rejection = Recipient was reported to (1) have at least one acute rejection episode that was treated with an anti-rejection agent; or (2) have been hospitalized for rejection.

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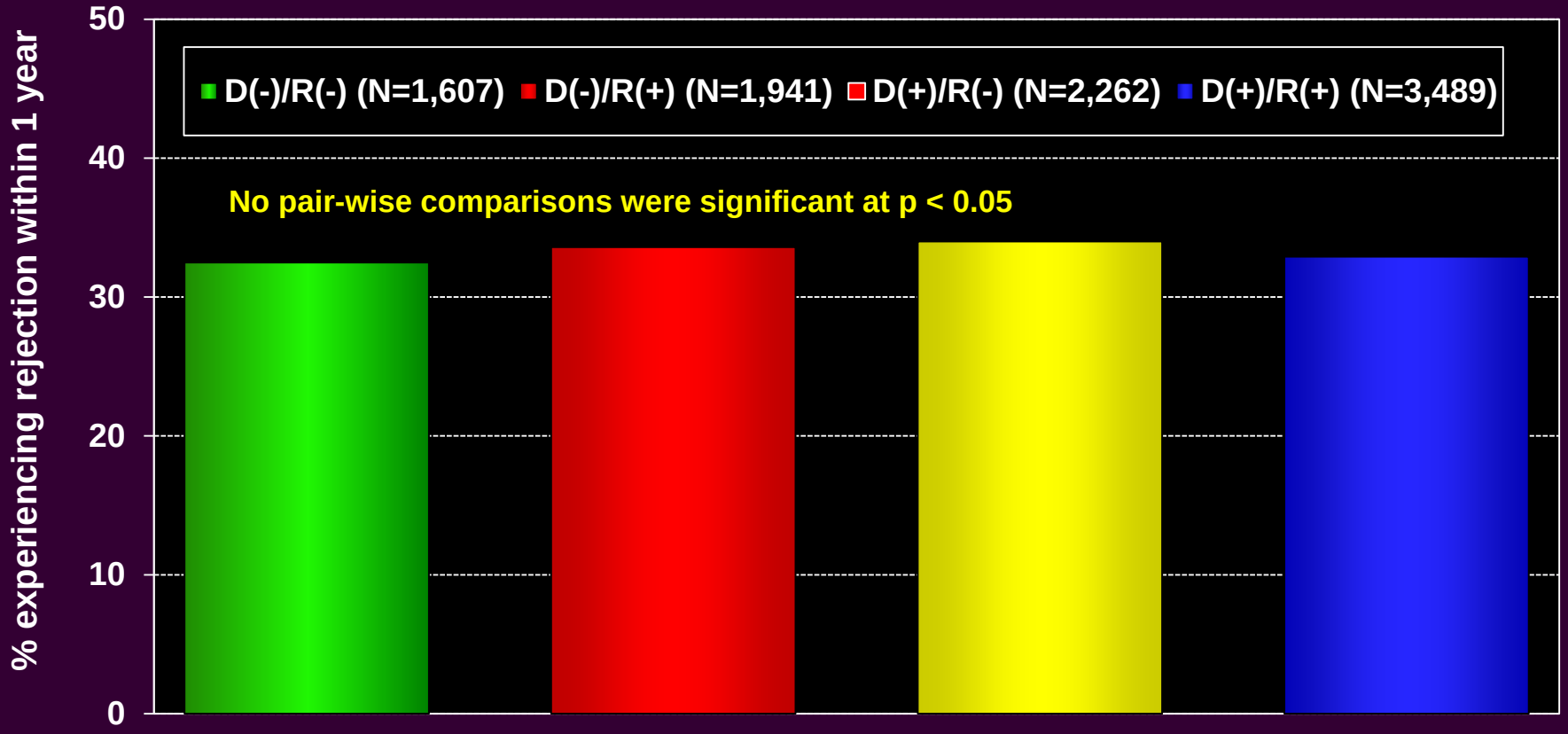
Adult Lung Transplants

Percentage Experiencing *Any* Rejection between Discharge and 1-Year Follow-Up by Donor/Recipient CMV Status

(Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

Any rejection = Recipient was reported to (1) have at least one acute rejection episode; or (2) have been hospitalized for rejection.

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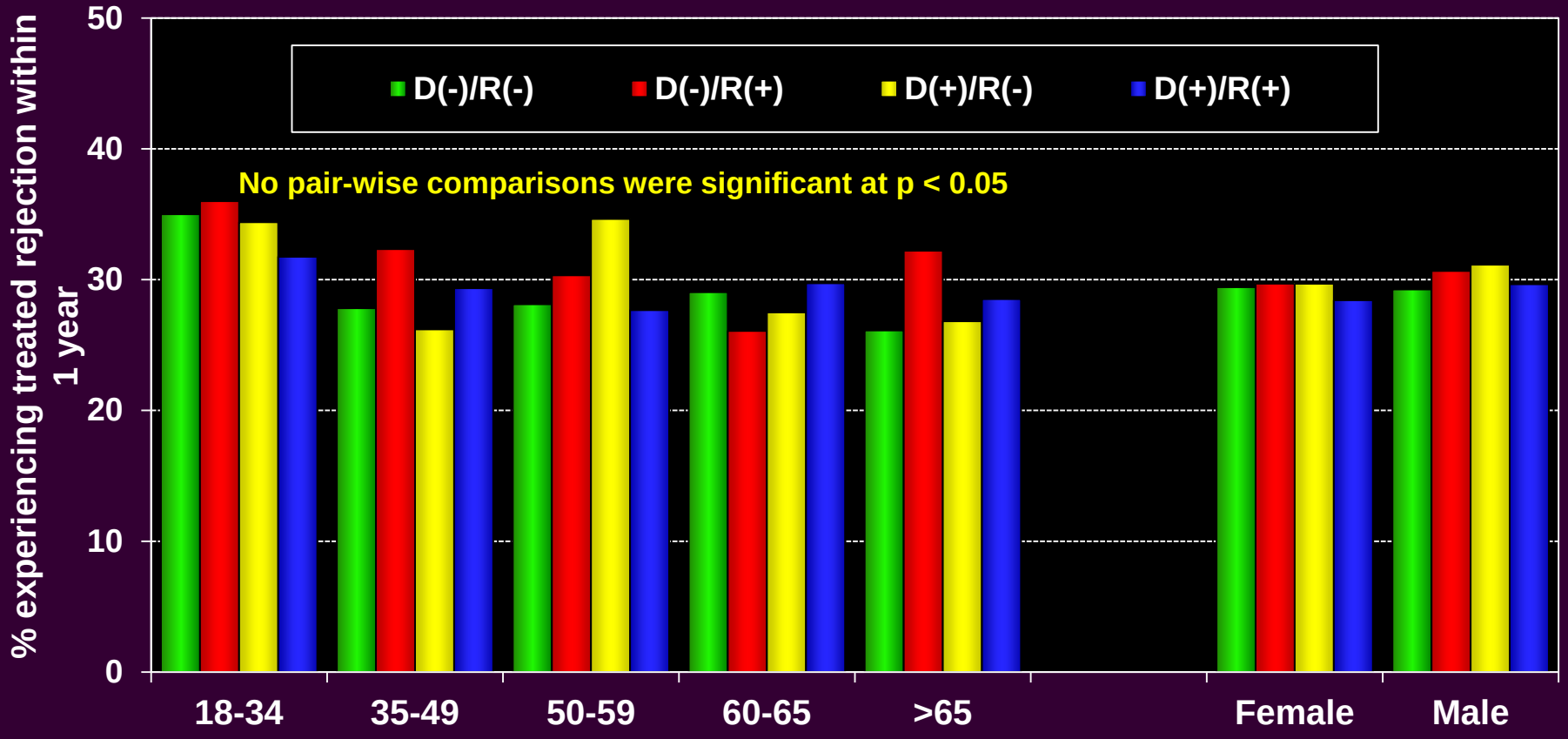
Adult Lung Transplants

Percentage Experiencing *Treated* Rejection between Discharge and 1-Year Follow-Up by Donor/Recipient CMV Status

(Follow-ups: July 2004 – June 2012)



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Treated rejection = Recipient was reported to (1) have at least one acute rejection episode that was treated with an anti-rejection agent; or (2) have been hospitalized for rejection.

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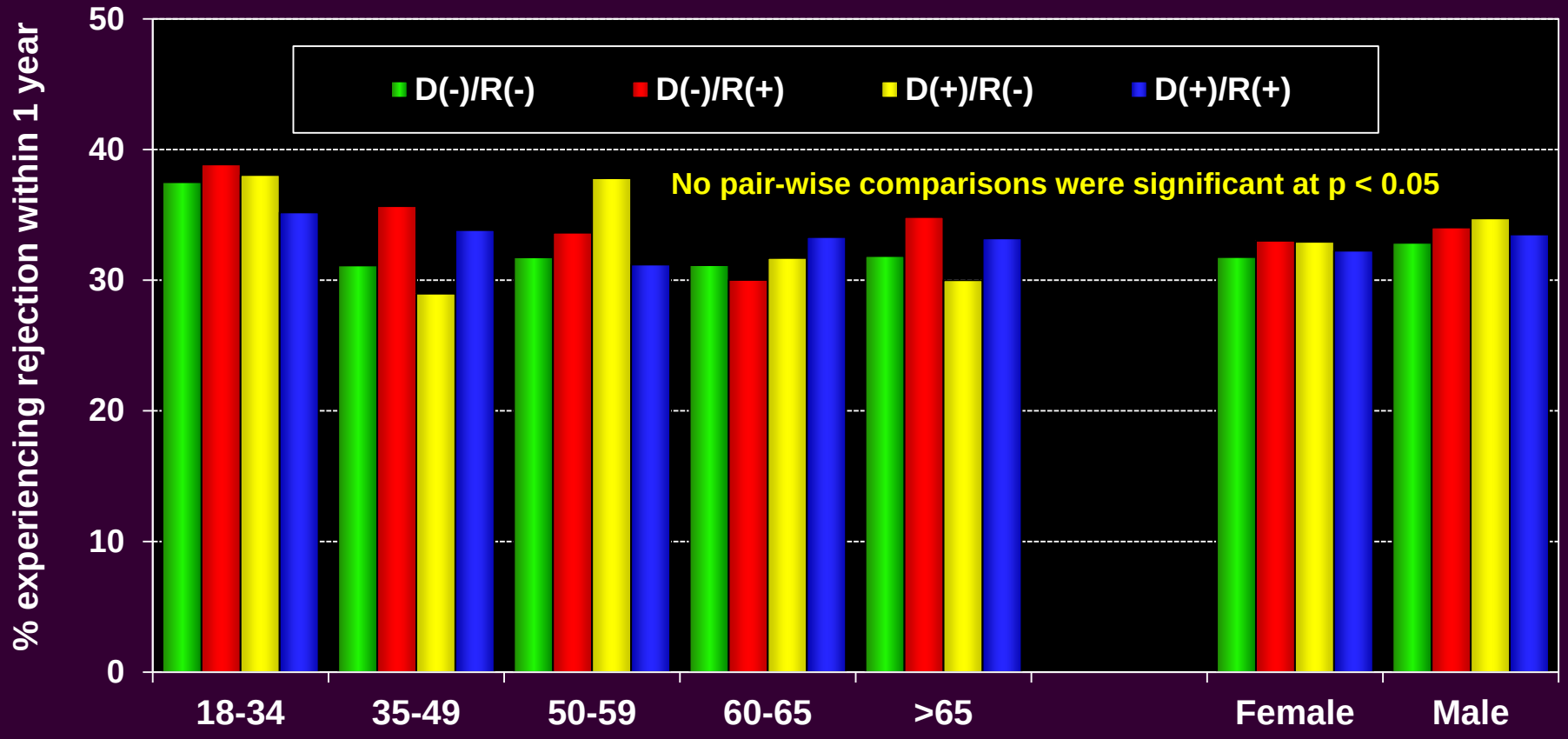
Adult Lung Transplants

Percentage Experiencing *Any* Rejection between Discharge and 1-Year Follow-Up by Donor/Recipient CMV Status

(Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

Any rejection = Recipient was reported to (1) have at least one acute rejection episode; or (2) have been hospitalized for rejection.

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Functional and Employment Status and Rehospitalization Post-Transplant

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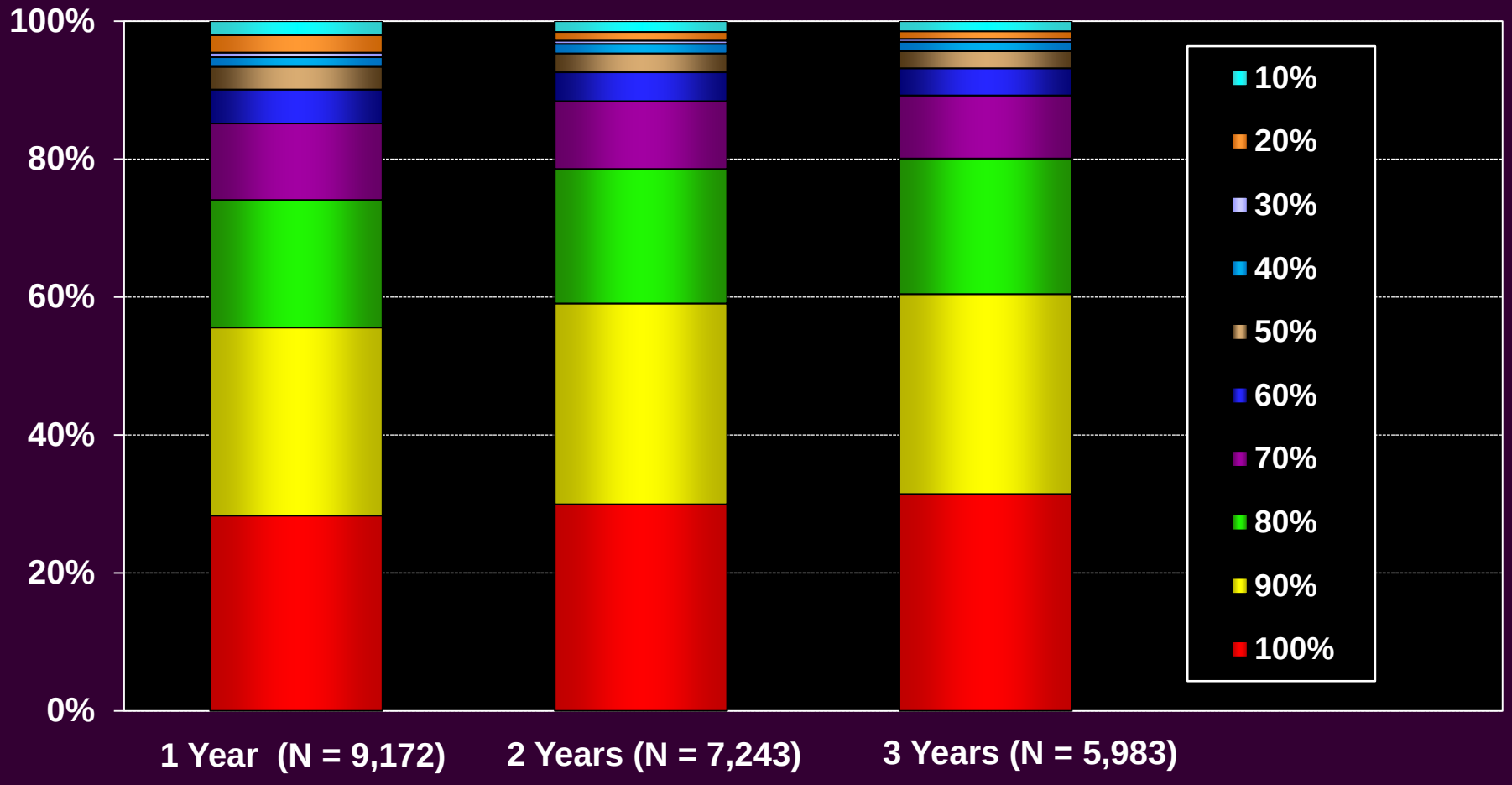
Adult Lung Transplants
Functional Status of Surviving Recipients
(Follow-ups: March 2005 – June 2012)



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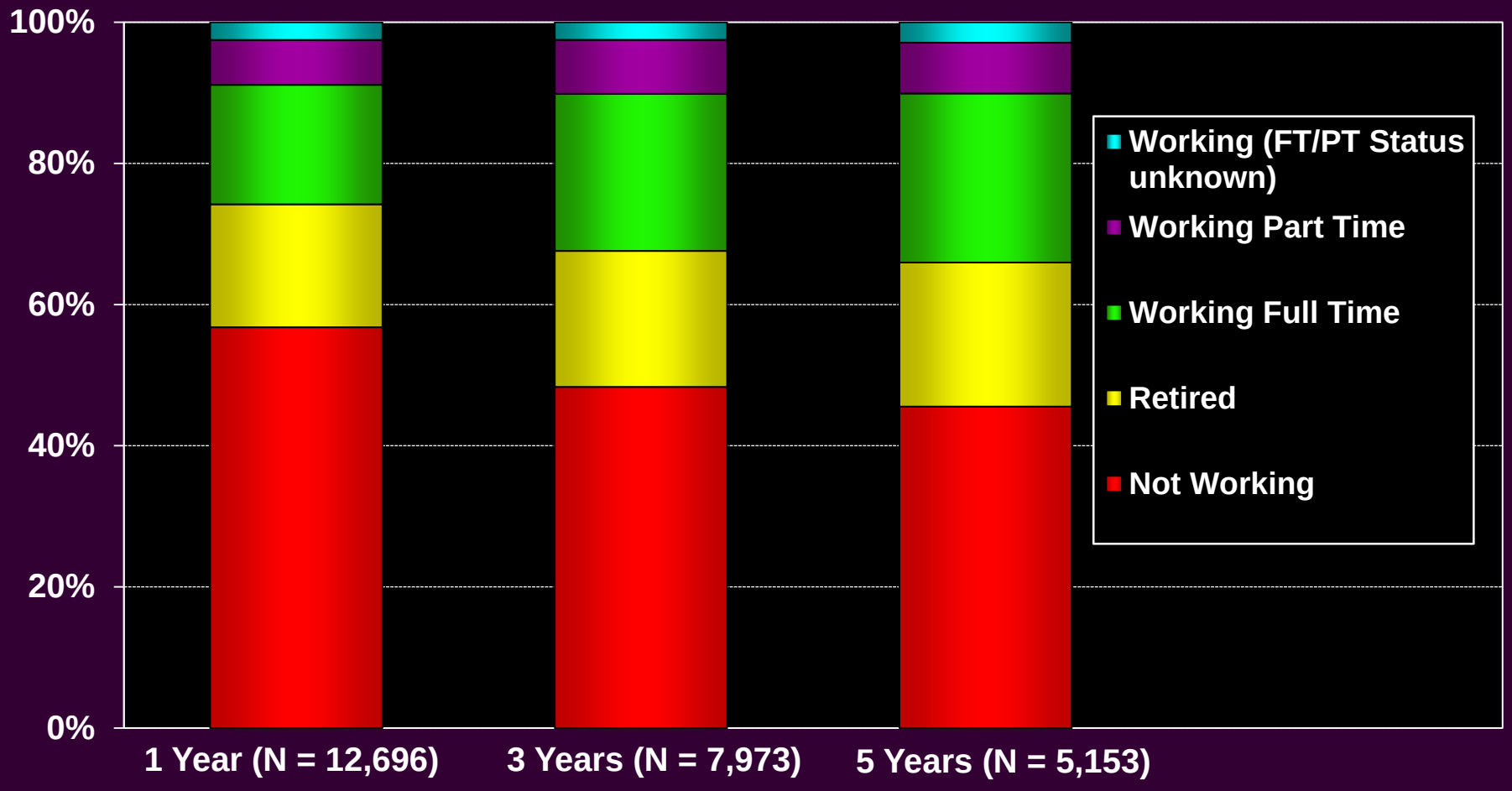
Adult Lung Transplants
Employment Status of Surviving Recipients
(Follow-ups: April 1994 – June 2012)



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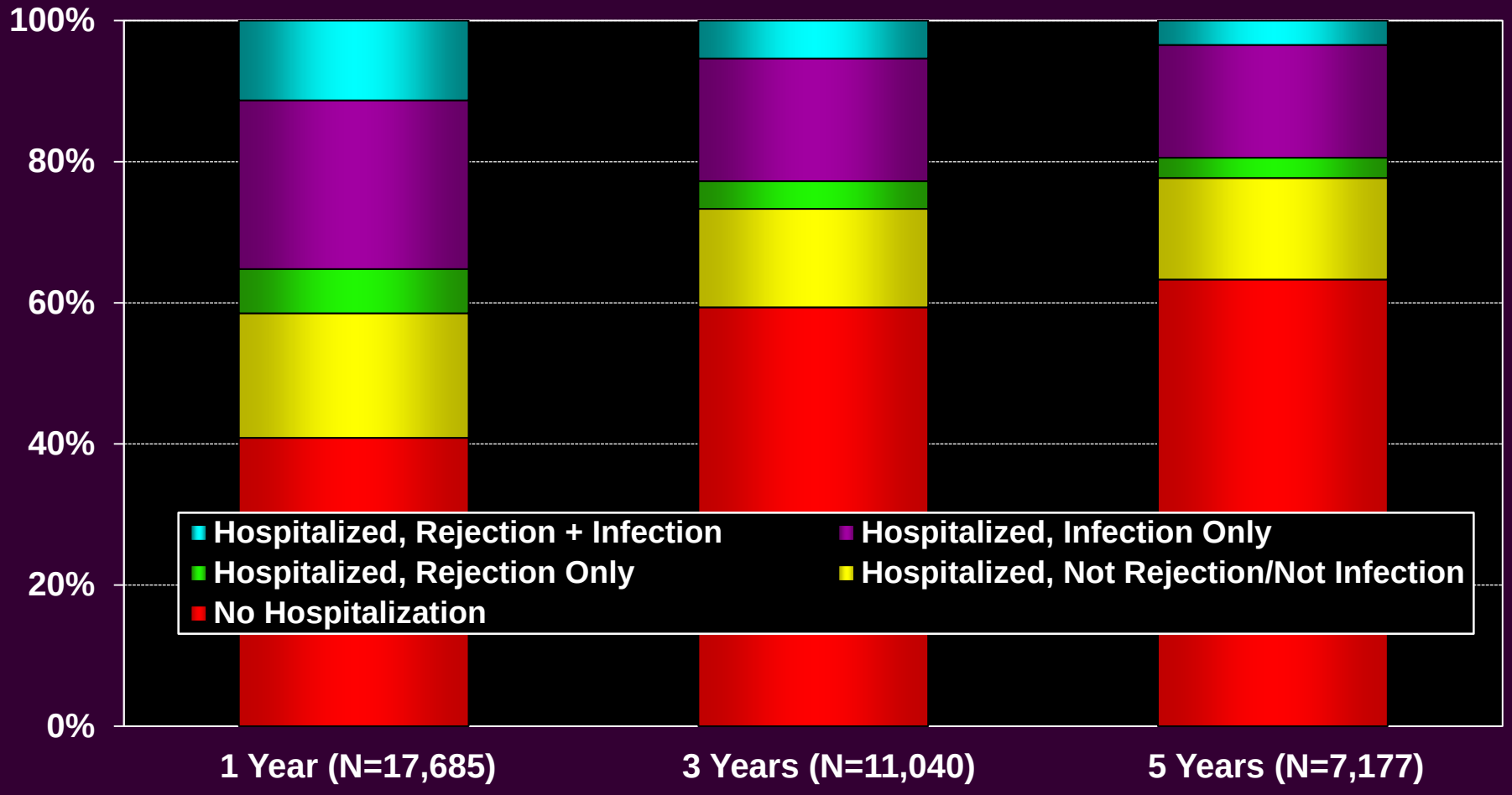
Adult Lung Transplants
Rehospitalization Post-transplant of Surviving Recipients
(Follow-ups: April 1994 – June 2012)



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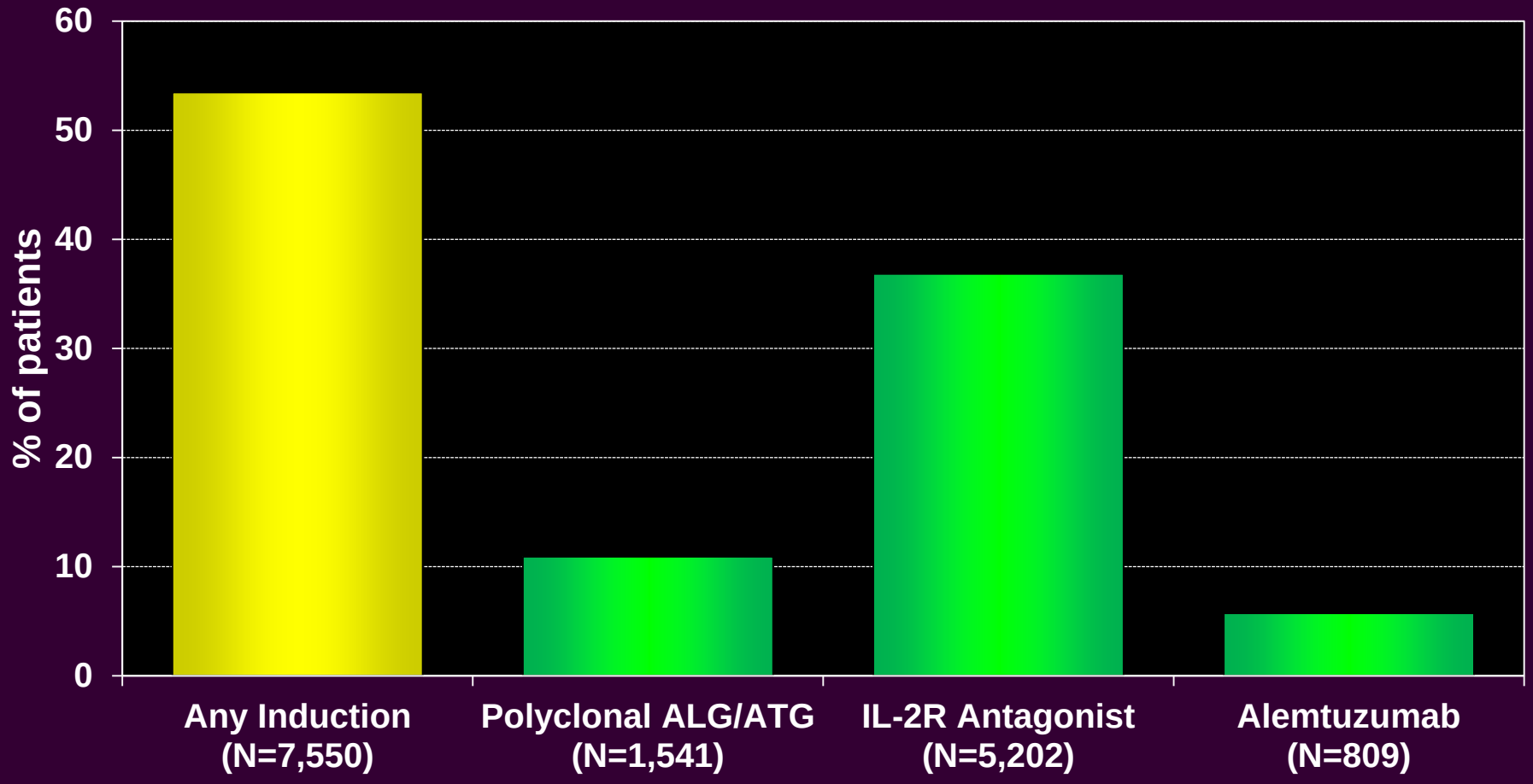
Induction and Maintenance Immunosuppression

Adult Lung Transplants
Induction Immunosuppression
Analysis limited to patients receiving prednisone
(Transplants: January 2002 – June 2012)



Analysis is limited to patients who were alive at the time of the discharge

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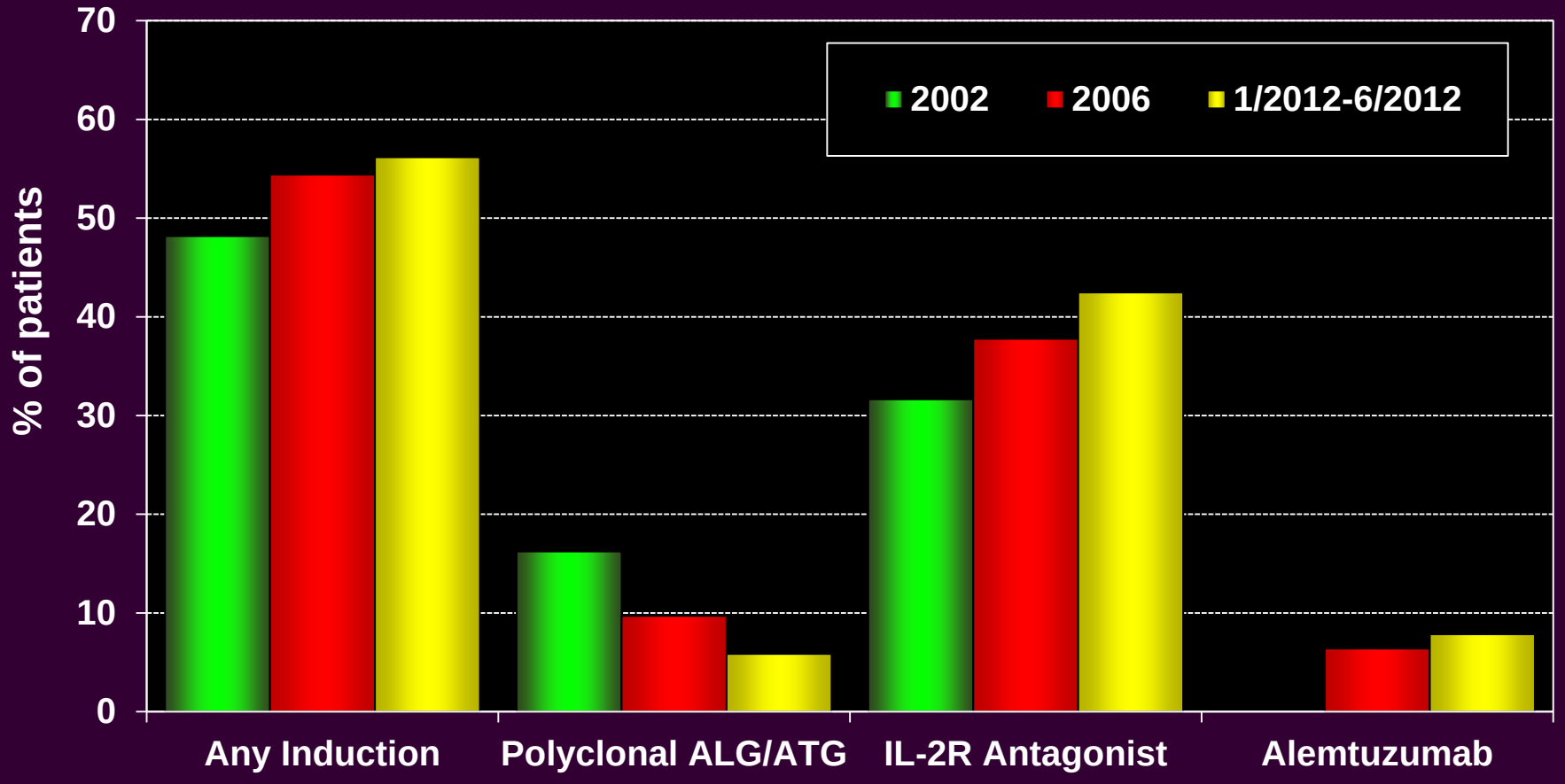
Adult Lung Transplants
Induction Immunosuppression
Analysis limited to patients receiving prednisone
(Transplants: 2002, 2006 and January 2012 – June 2012)



Analysis is limited to patients who were alive at the time of the discharge

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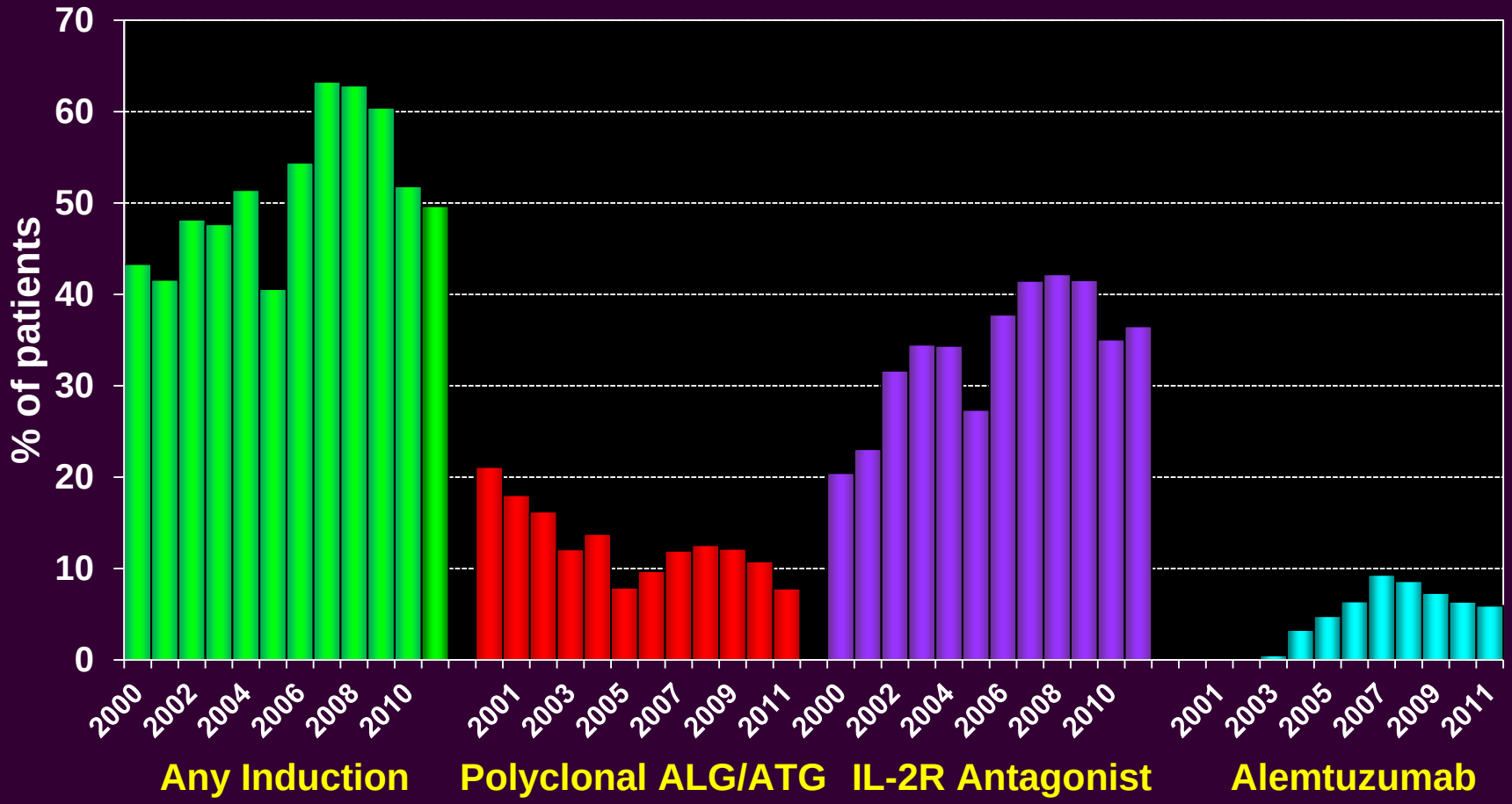
Adult Lung Transplants
Induction Immunosuppression
Analysis limited to patients receiving prednisone
(Transplants: January 2000 – December 2011)



Analysis is limited to patients who were alive at the time of the discharge

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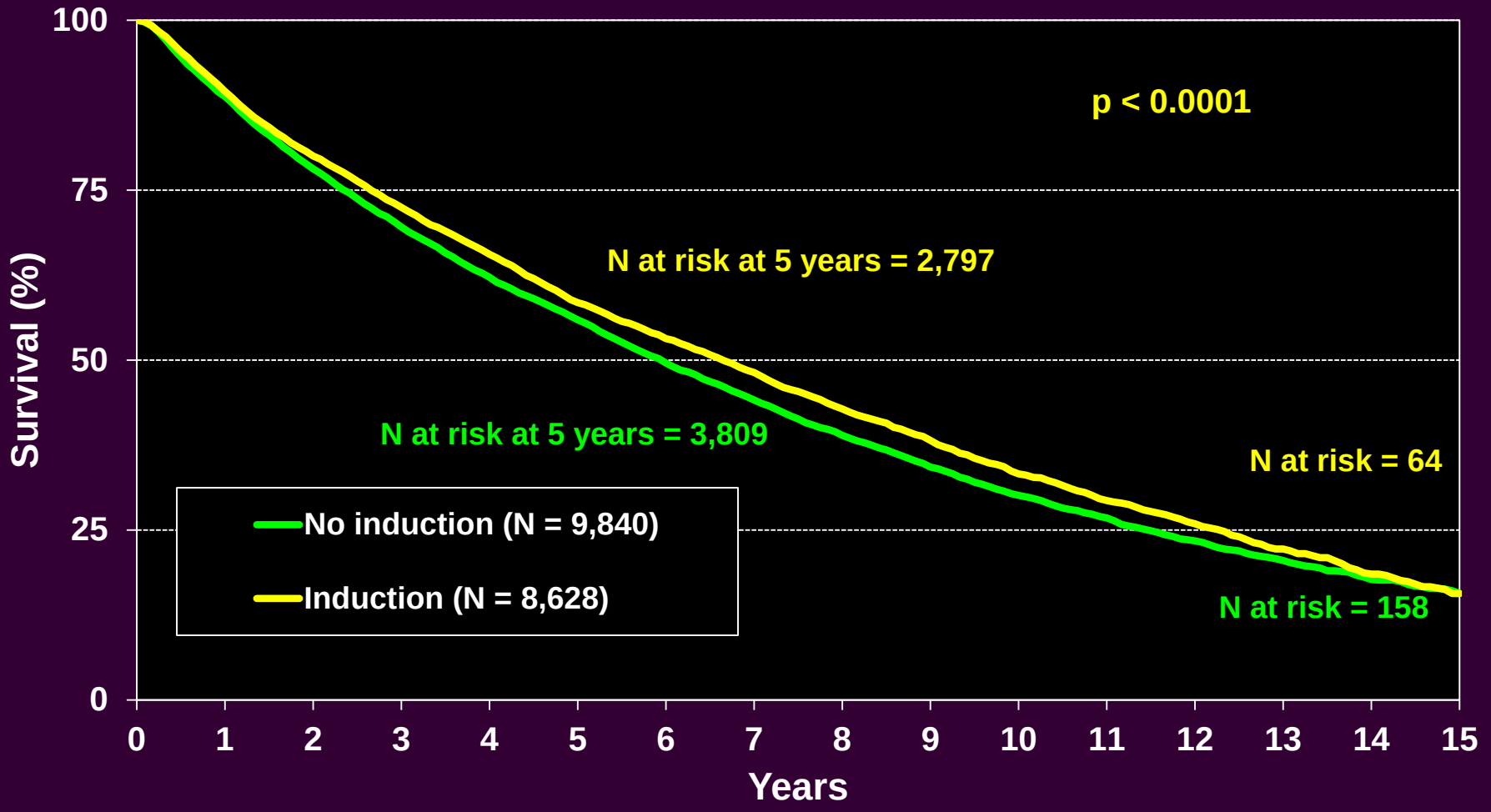
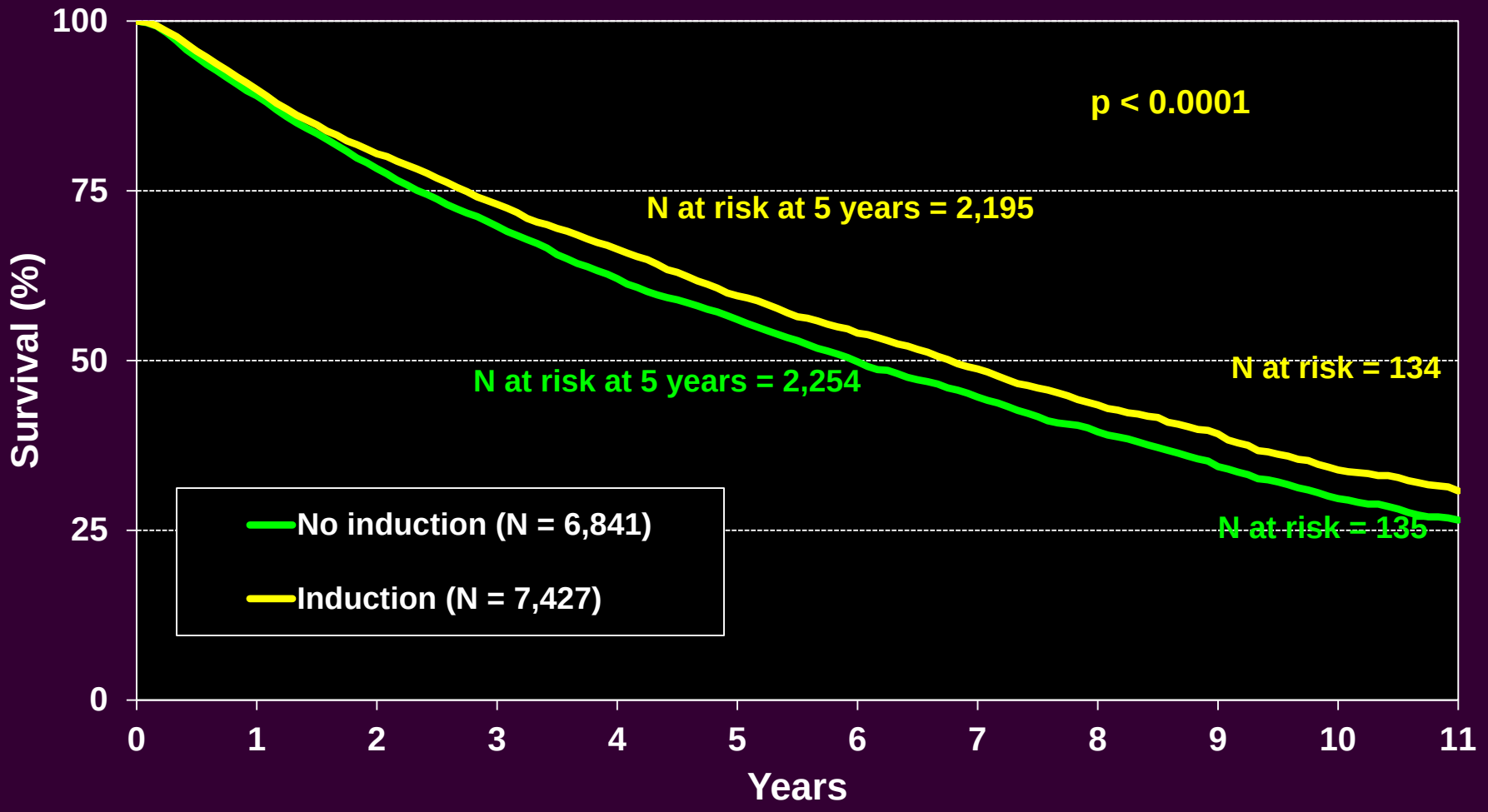
Adult Lung Transplants

Survival by Induction Usage Conditional on Survival to 14 Days (Transplants: April 1994 – June 2011)



Adult Lung Transplants

Survival by Induction Usage Conditional on Survival to 14 Days (Transplants: January 2000 – June 2011)



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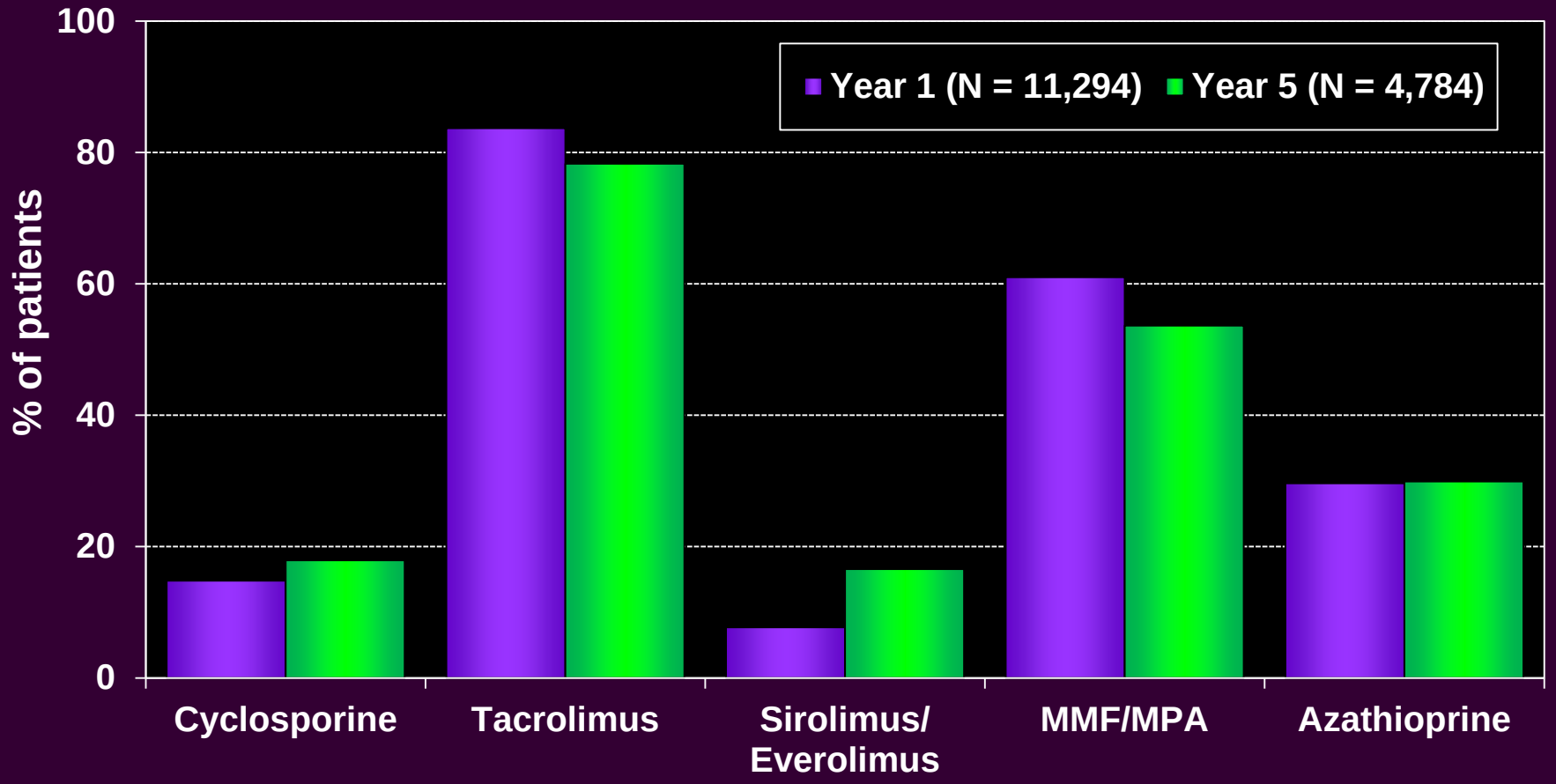
Adult Lung Transplants

Maintenance Immunosuppression at Time of Follow-up

Analysis limited to patients receiving prednisone

(Follow-ups: January 2002 – June 2012)



NOTE: Different patients are analyzed in Year 1 and Year 5

Analysis is limited to patients who were alive at the time of the follow-up

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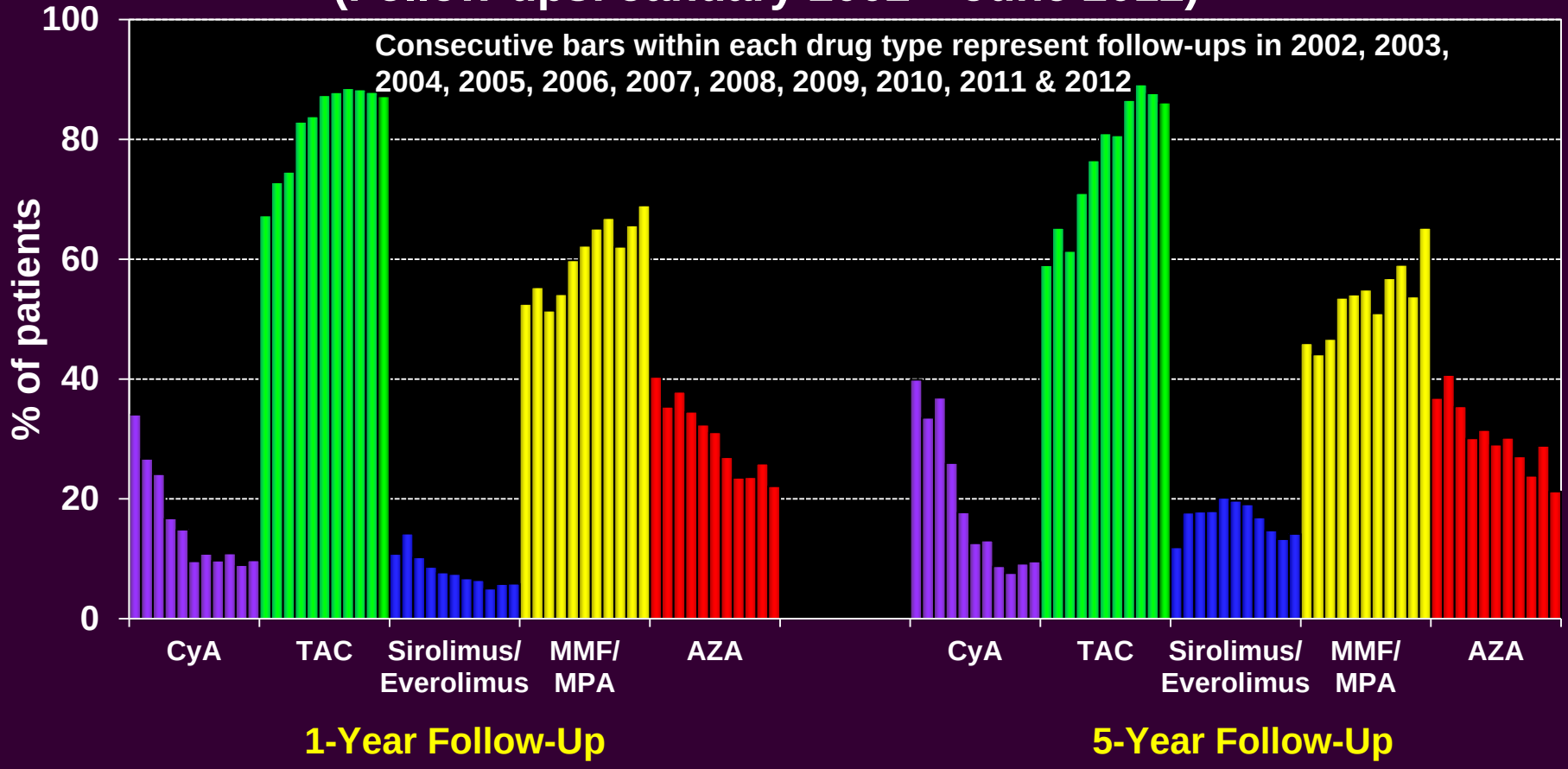
Adult Lung Transplants

Maintenance Immunosuppression at Time of Follow-up

Analysis limited to patients receiving prednisone

(Follow-ups: January 2002 – June 2012)



NOTE: Different patients are analyzed in Year 1 and Year 5

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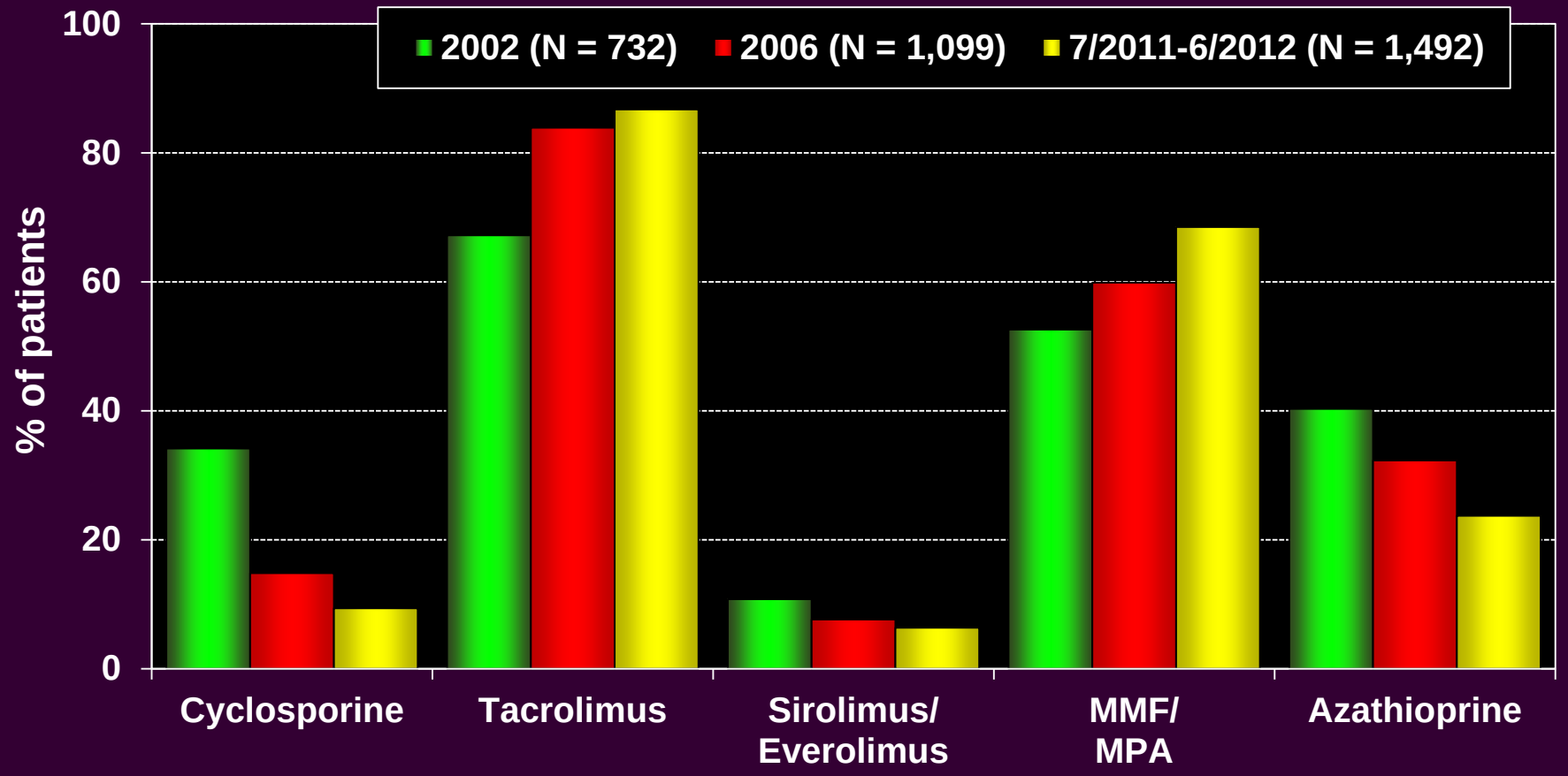
Analysis is limited to patients who were alive at the time of the discharge

Adult Lung Transplants

Maintenance Immunosuppression at Time of 1 Year Follow-up

Analysis limited to patients receiving prednisone

(Follow-ups: 2002, 2006 and July 2011 – June 2012)



NOTE: Different patients are analyzed in each time frame

Analysis is limited to patients who were alive at the time of the follow-up

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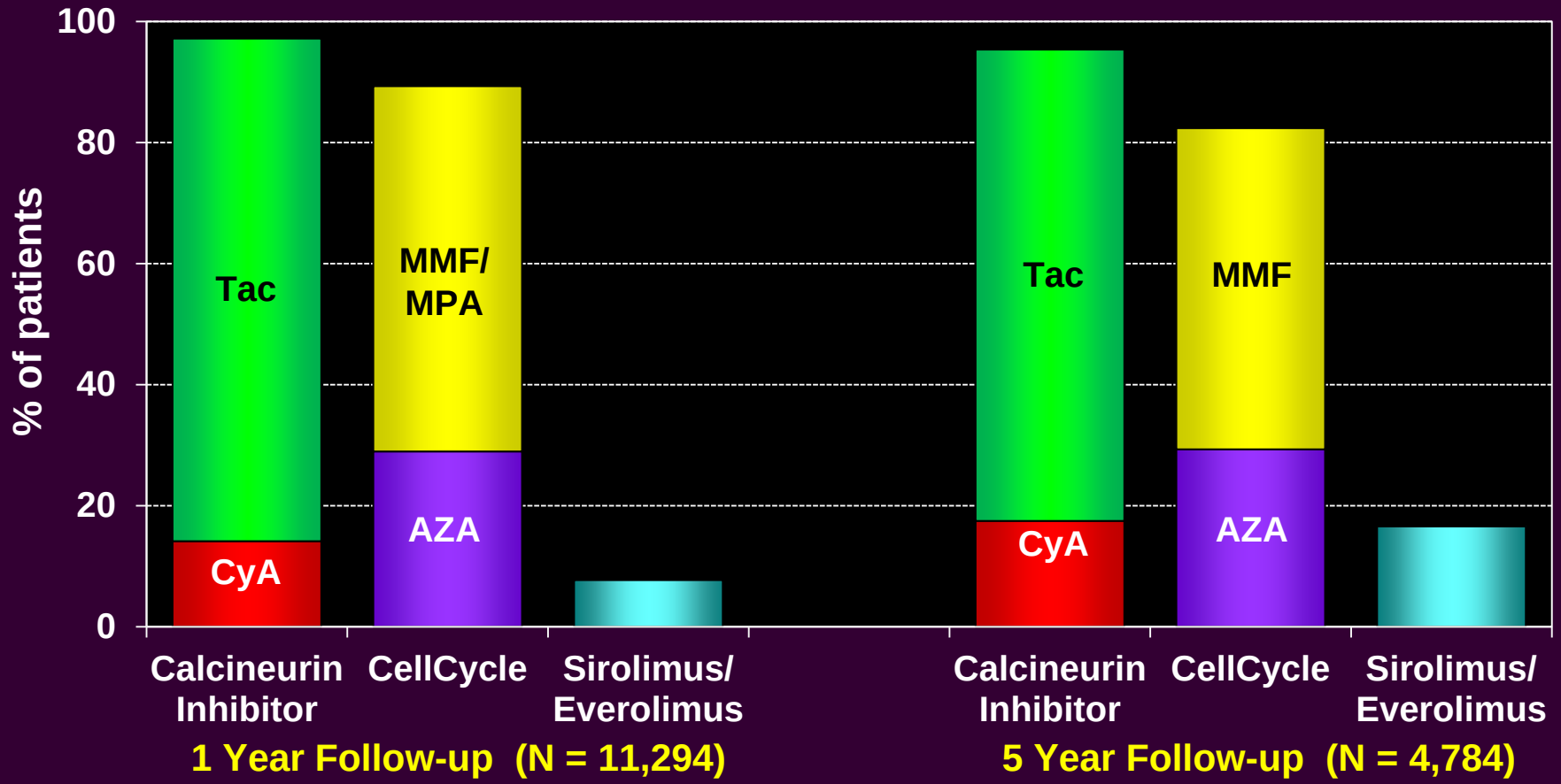
Adult Lung Transplants

Maintenance Immunosuppression at Time of Follow-up

Analysis limited to patients receiving prednisone

(Follow-ups: January 2002 – June 2012)



NOTE: Different patients are analyzed in Year 1 and Year 5

Analysis is limited to patients who were alive at the time of the follow-up

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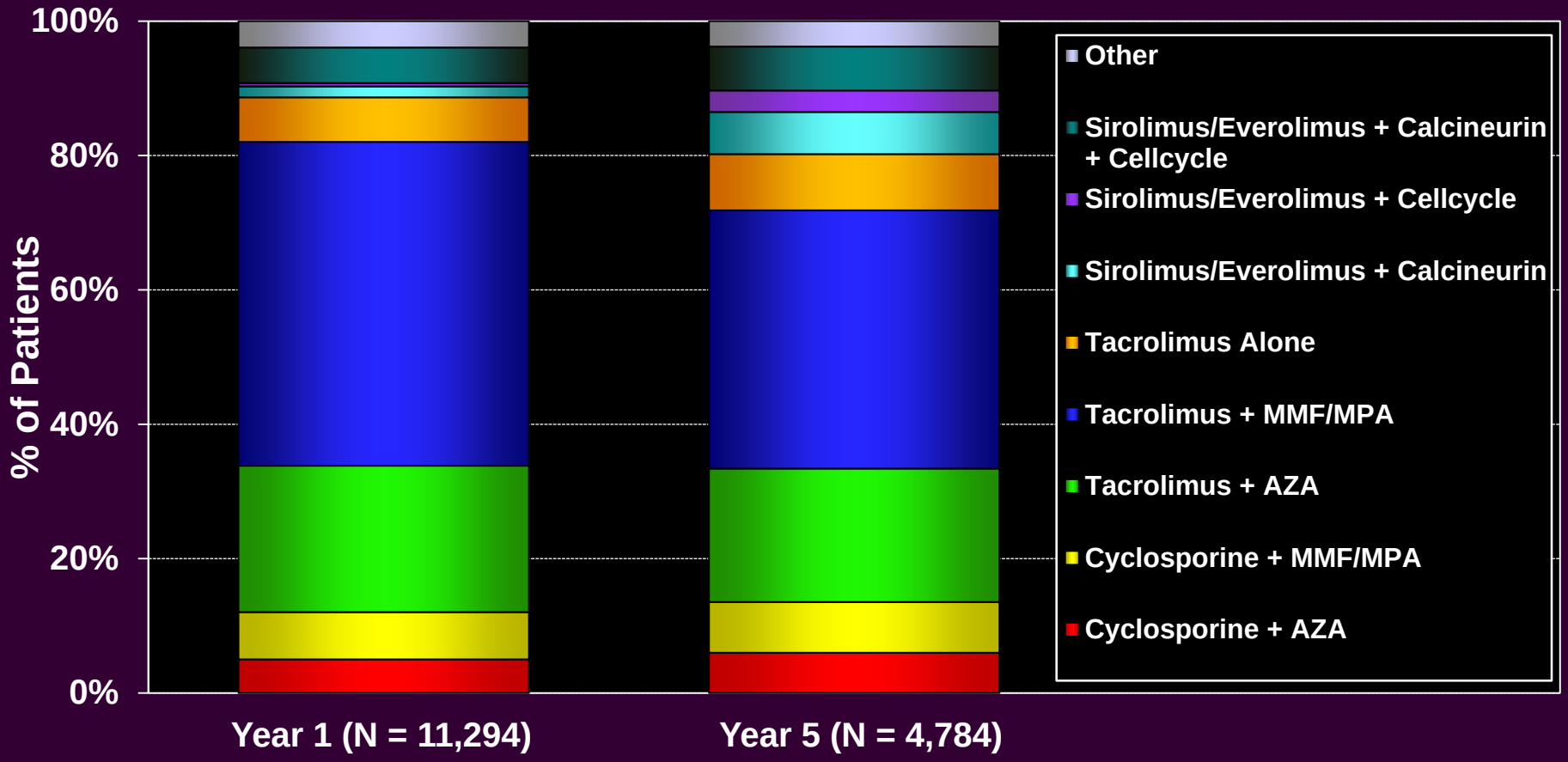
Adult Lung Transplants
Maintenance Immunosuppression Drug Combinations at Time of Follow-up (Follow-ups: January 2002 – June 2012)
Analysis limited to patients receiving prednisone



NOTE: Different patients are analyzed in Year 1 and Year 5

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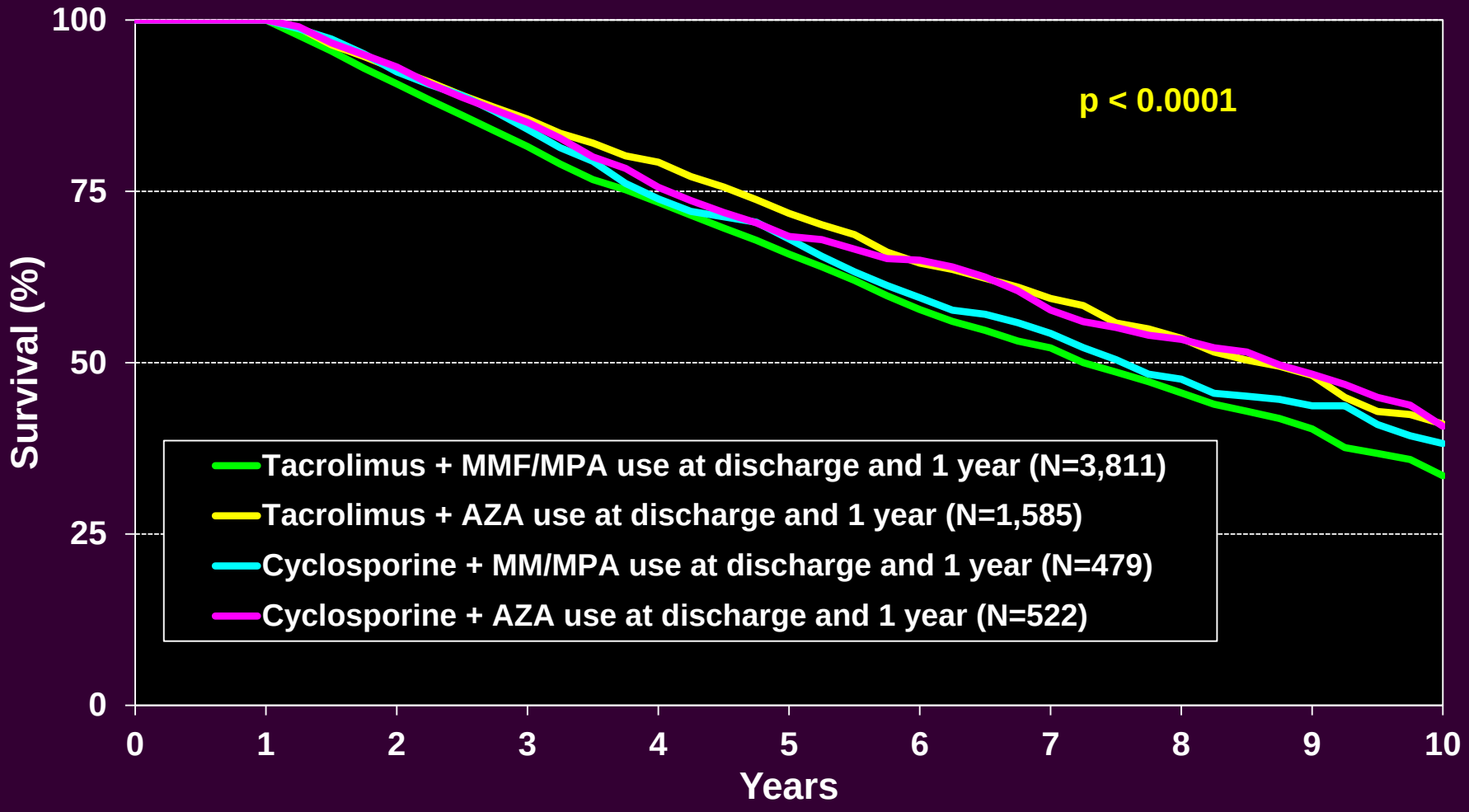
Analysis is limited to patients who were alive at the time of the follow-up

Adult Lung Transplants

Kaplan-Meier Survival by Maintenance Immunosuppression Combinations Conditional on Survival to 1 Year (Transplants: January 2000 – June 2011)

Analysis limited to patients receiving prednisone



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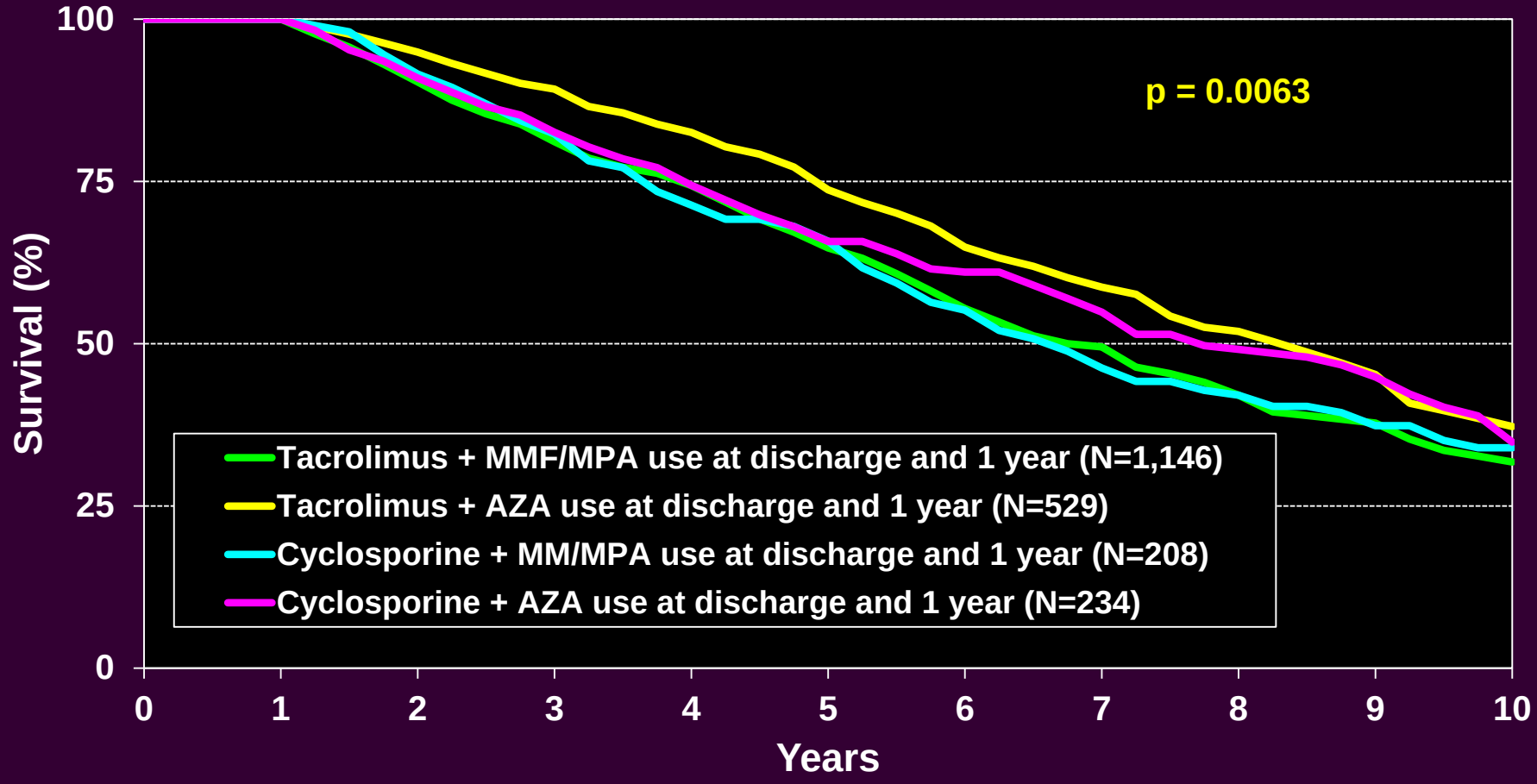
Adult Lung Transplants

Kaplan-Meier Survival by Maintenance Immunosuppression Combinations Conditional on Survival to 1 Year (Transplants: January 2000 – June 2011)

Analysis limited to patients receiving prednisone

Diagnosis: COPD/Emphysema



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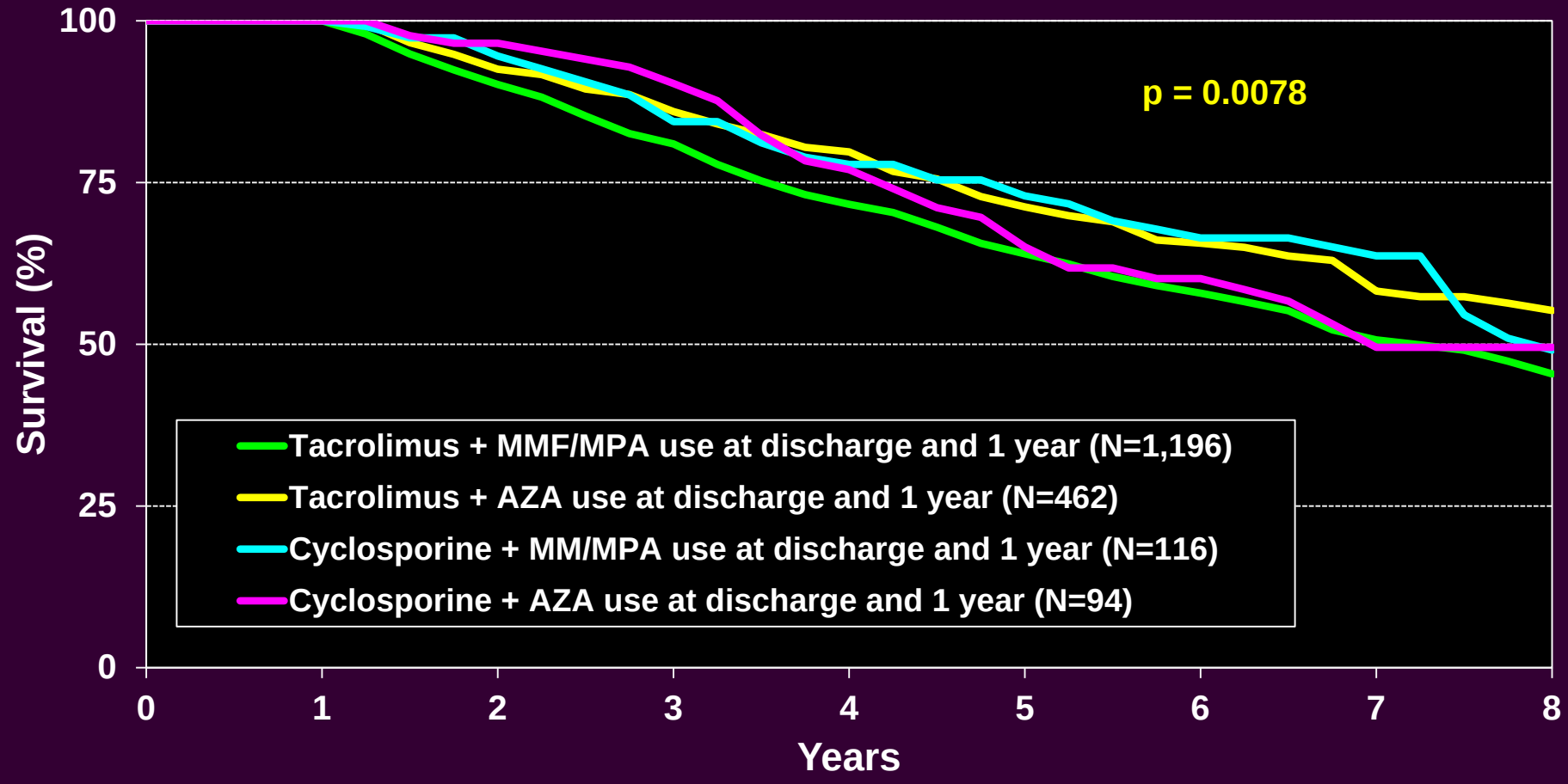
Adult Lung Transplants

Kaplan-Meier Survival by Maintenance Immunosuppression Combinations Conditional on Survival to 1 Year (Transplants: January 2000 – June 2011)

Analysis limited to patients receiving prednisone

Diagnosis: Idiopathic Pulmonary Fibrosis



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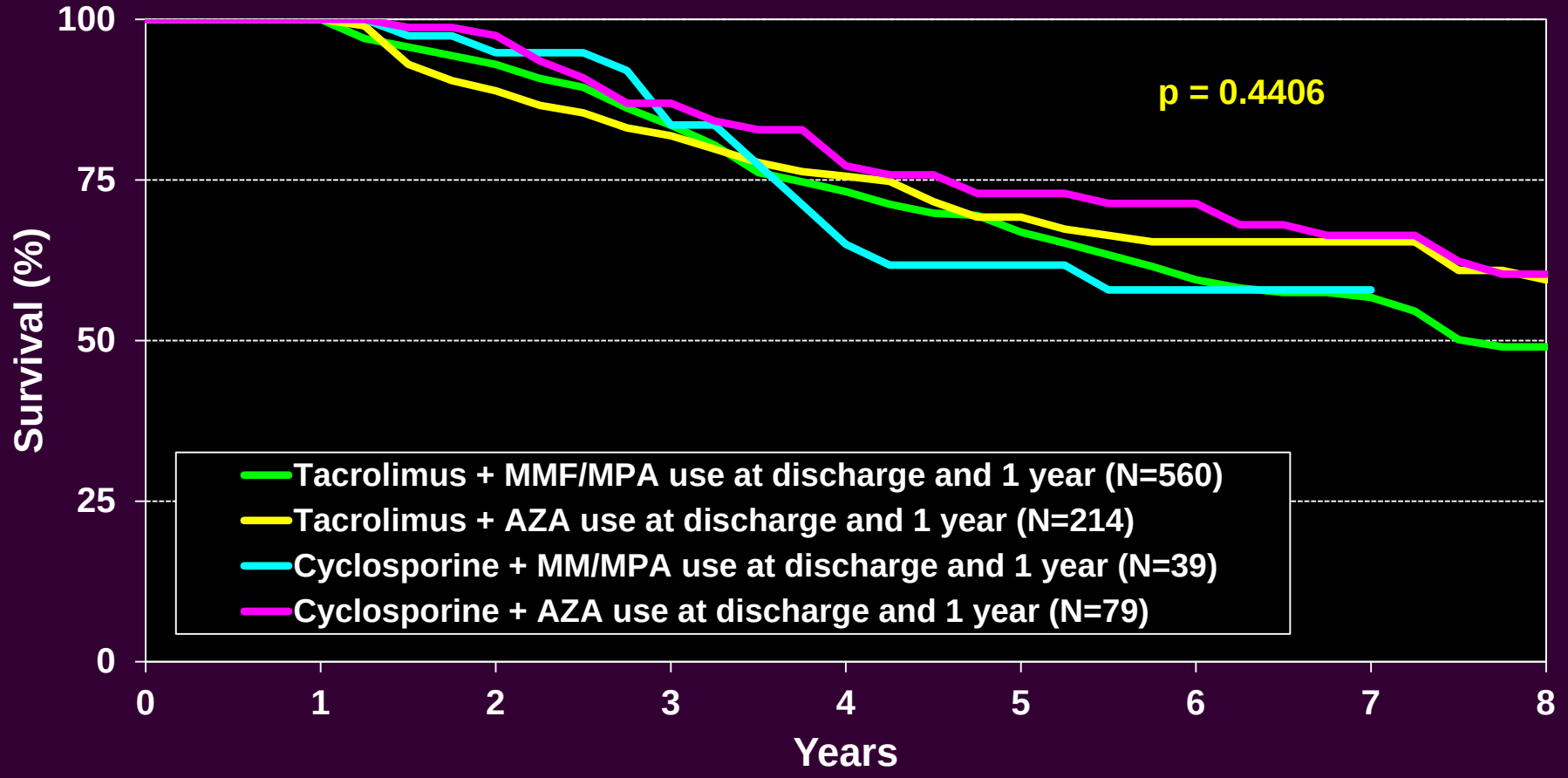
Adult Lung Transplants

Kaplan-Meier Survival by Maintenance Immunosuppression Combinations Conditional on Survival to 1 Year (Transplants: January 2000 – June 2011)

Analysis limited to patients receiving prednisone

Diagnosis: Cystic Fibrosis



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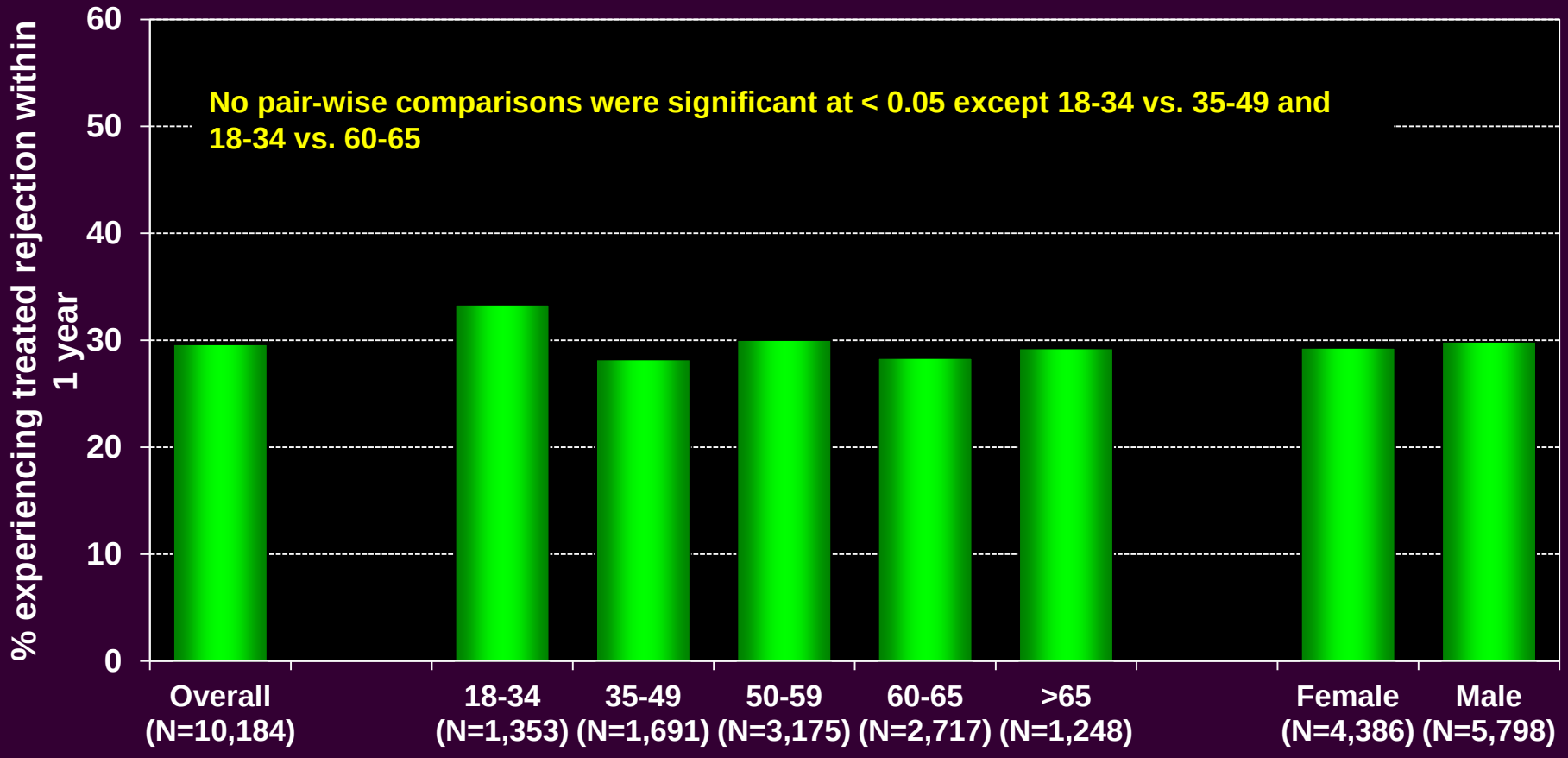
Adult Lung Transplants

Percentage Experiencing Treated Rejection between Discharge and 1-Year Follow-Up (Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

Treated rejection = Recipient was reported to (1) have at least one acute rejection episode that was treated with an anti-rejection agent; or (2) have been hospitalized for rejection.

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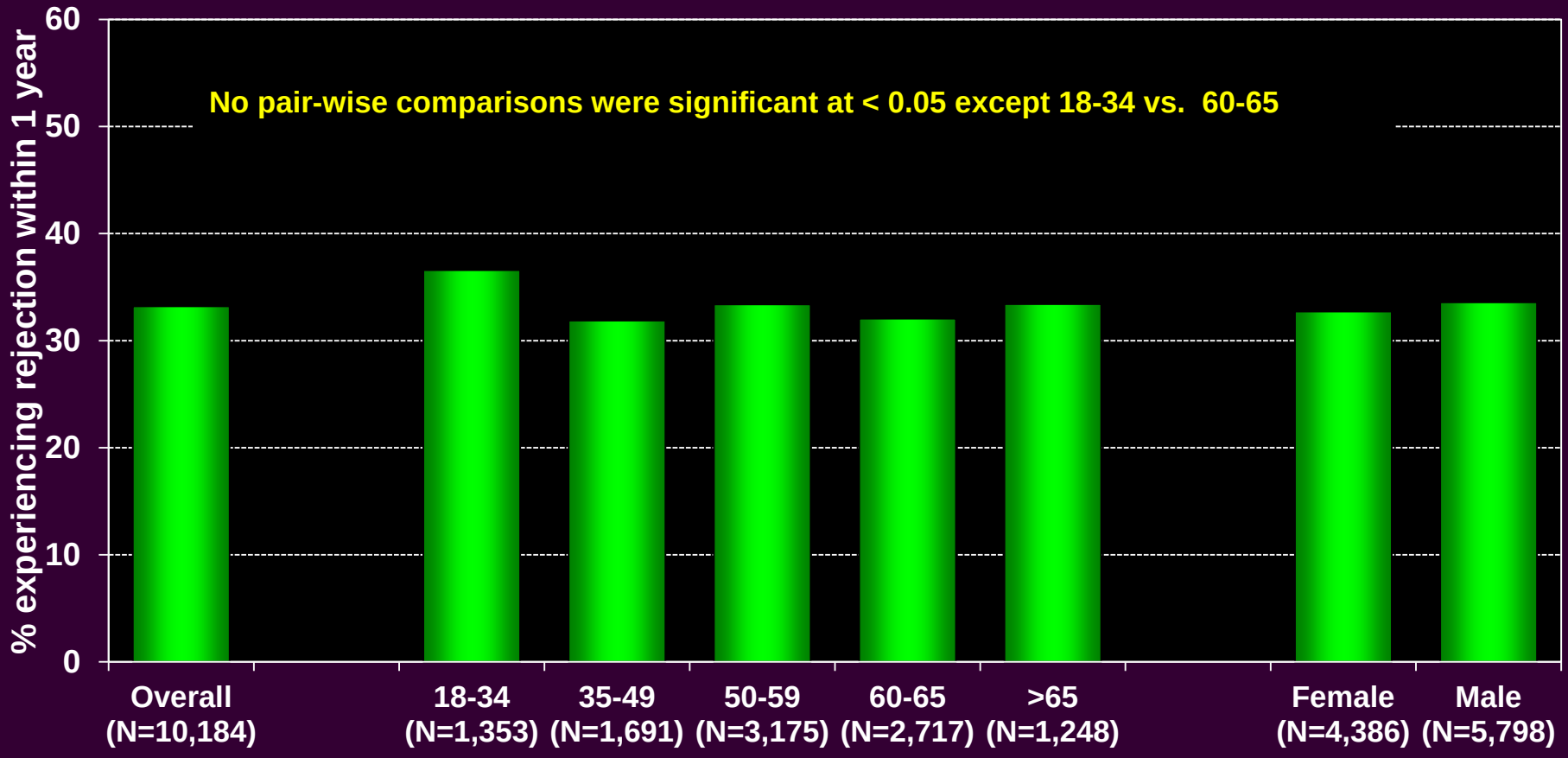
Adult Lung Transplants
Percentage Experiencing Rejection between Discharge and 1-Year Follow-Up (Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

No rejection = Recipient had (i) no acute rejection episodes and (ii) was reported either as not hospitalized for rejection or did not receive anti-rejection agents.

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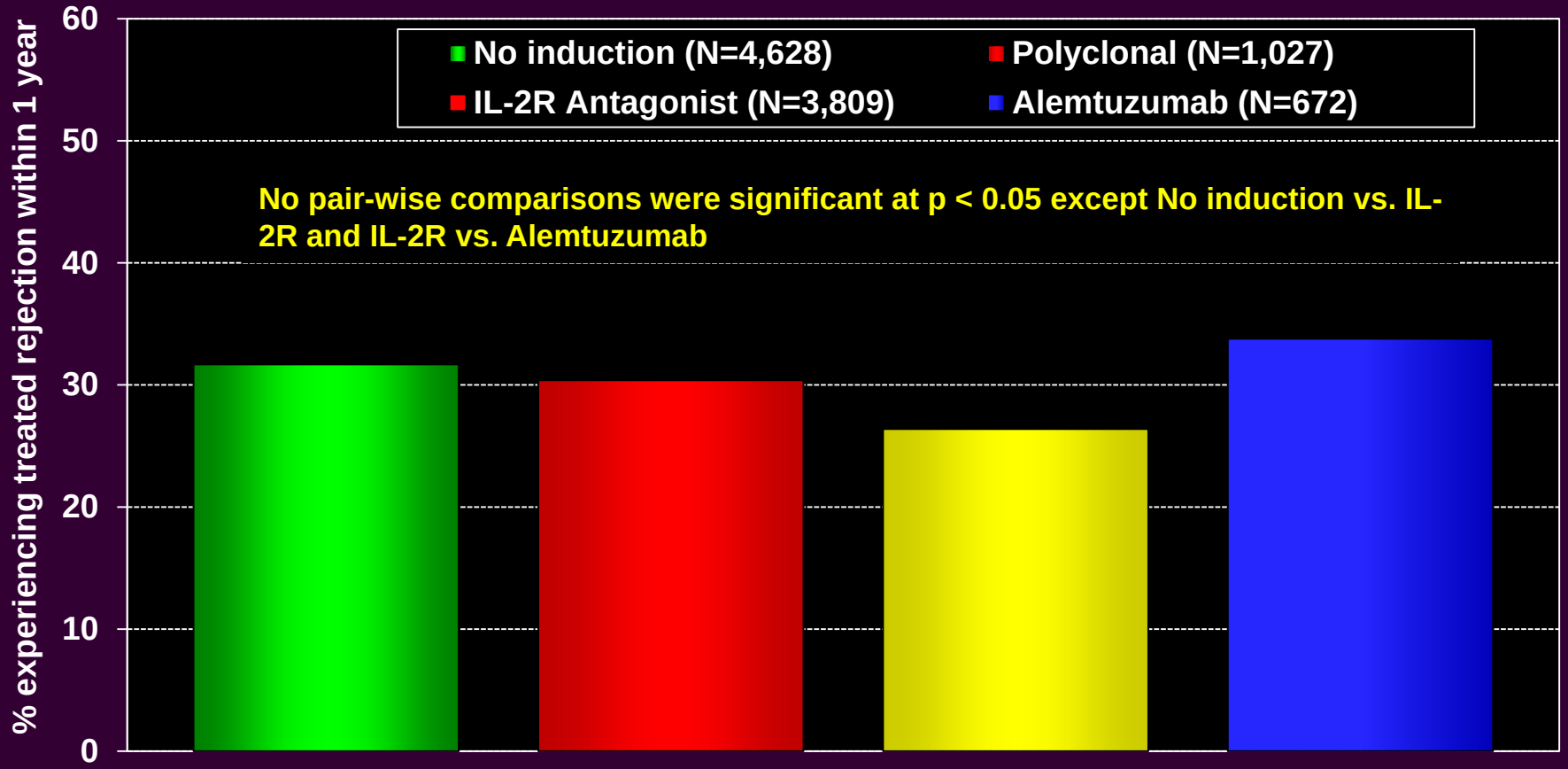
Adult Lung Transplants

Percentage Experiencing Treated Rejection between Discharge and 1-Year Follow-Up by Type of Induction (Follow-ups: July 2004 – June 2012)



Analysis is limited to patients who were alive at the time of the follow-up

Treated rejection = Recipient was reported to (1) have at least one acute rejection episode that was treated with an anti-rejection agent; or (2) have been hospitalized for rejection.

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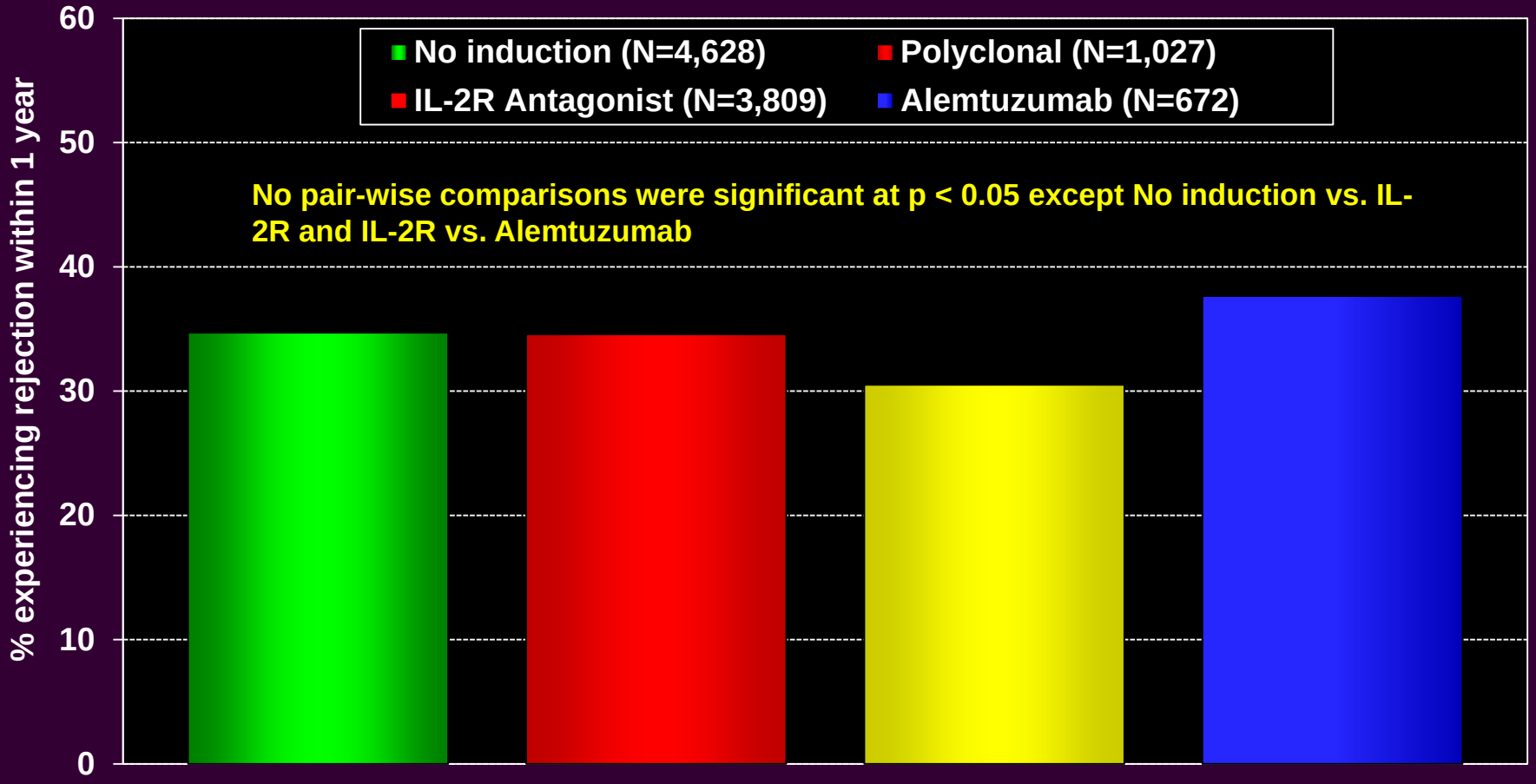
Adult Lung Transplants

Percentage Experiencing Rejection between Discharge and 1-Year Follow-Up by Type of Induction (Follow-ups: July 2004 – June 2012)



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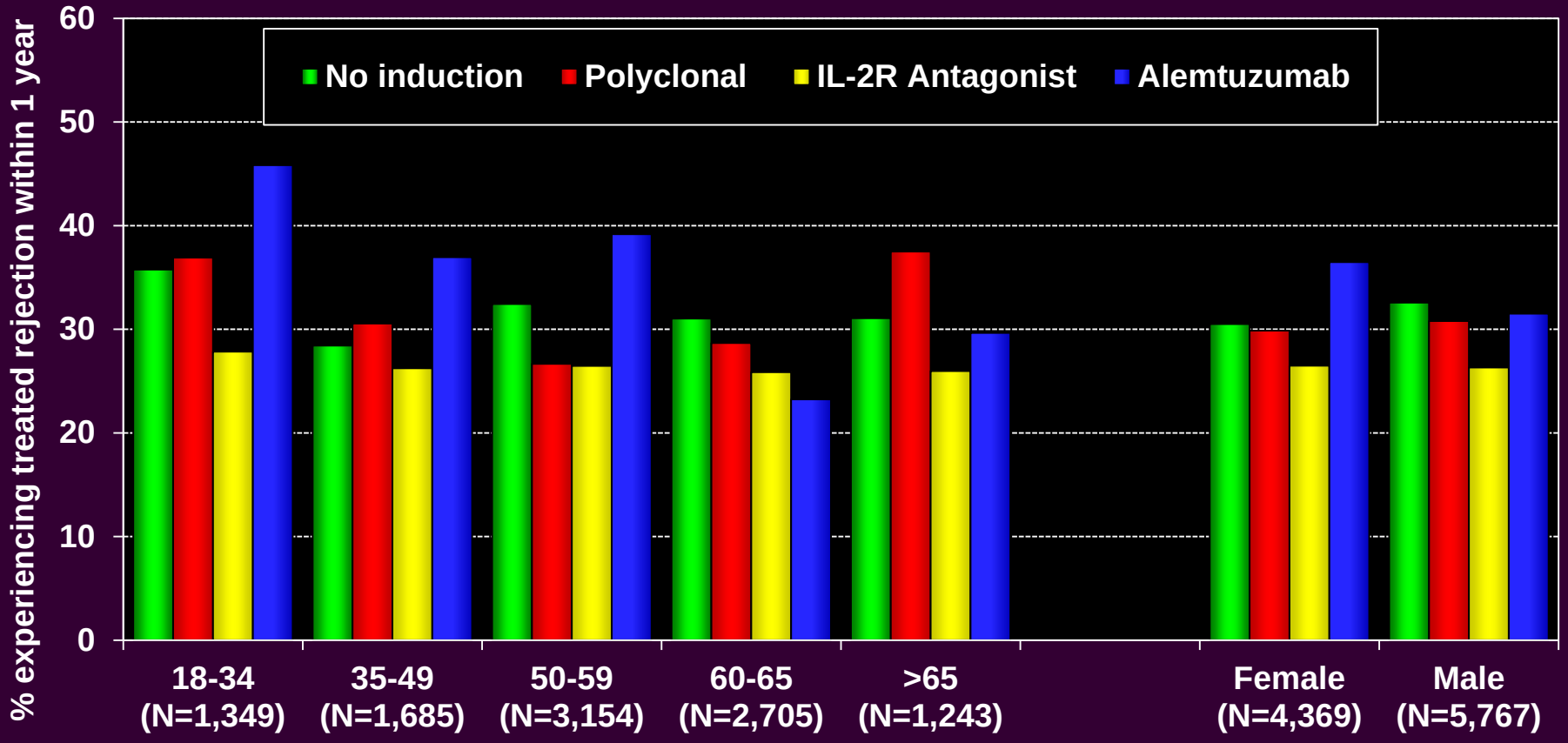
Adult Lung Transplants

Percentage Experiencing Treated Rejection between Discharge and 1-Year Follow-Up by Type of Induction (Follow-ups: July 2004 – June 2012)



No induction vs. IL-2R (50-59 years and male) and IL-2R vs. Alemtuzumab (50-59 years and female) were significant at $p < 0.05$. No other pair-wise comparisons were significant

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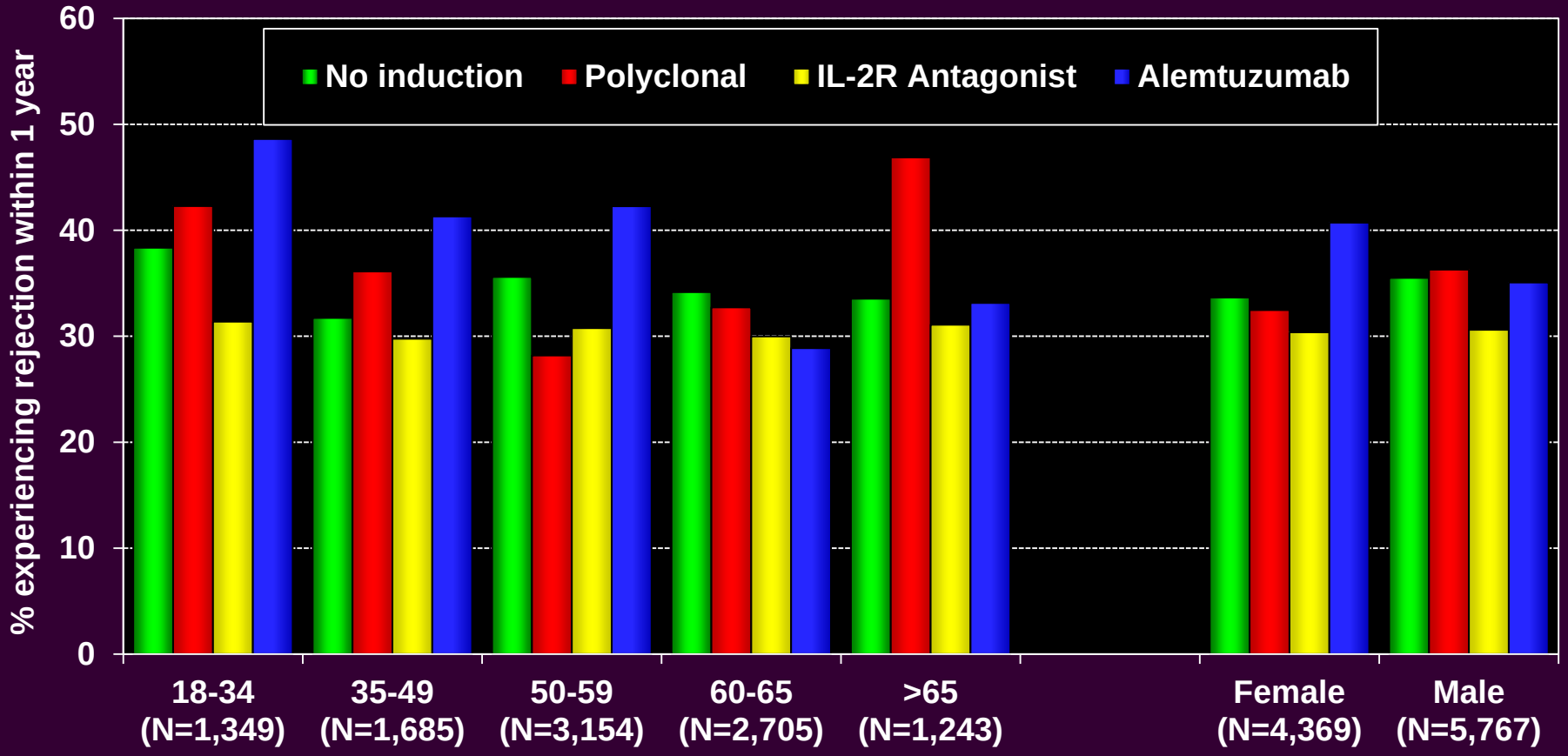
Percentage Experiencing Rejection between Discharge and 1-Year Follow-Up by Type of Induction (Follow-ups: July 2004 – June 2012)



No induction vs. IL-2R (male) , Polyclonal vs. Alemtuzumab (50-59 years) and IL-2R vs. Alemtuzumab (female) were significant at $p < 0.05$. No other pair-wise comparisons were significant

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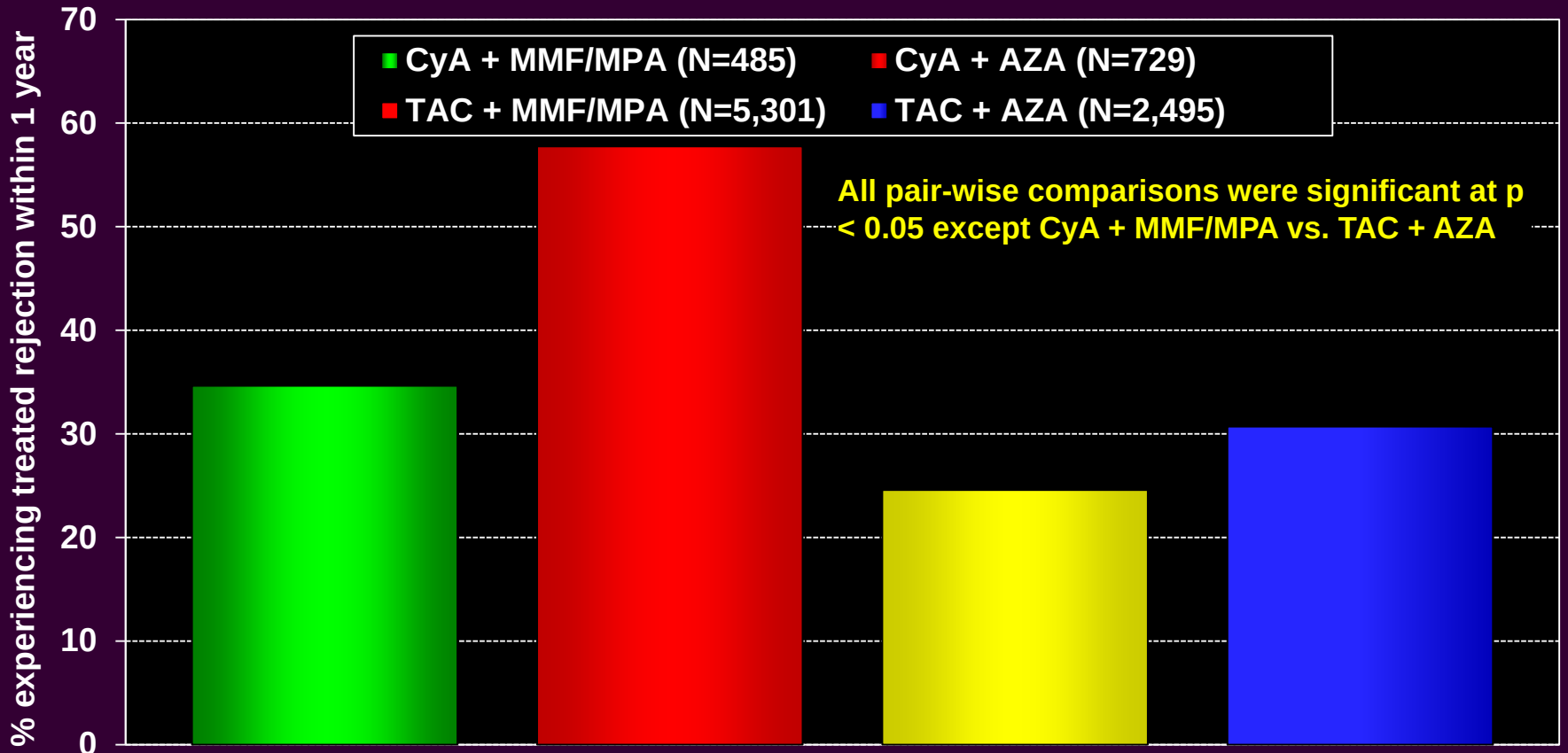
Adult Lung Transplants

Percentage Experiencing Treated Rejection between Discharge and 1-Year Follow-Up by Maintenance Immunosuppression

(Follow-ups: July 2004 – June 2012)



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Percentage Experiencing Rejection between Discharge and 1-Year Follow-Up by Maintenance Immunosuppression

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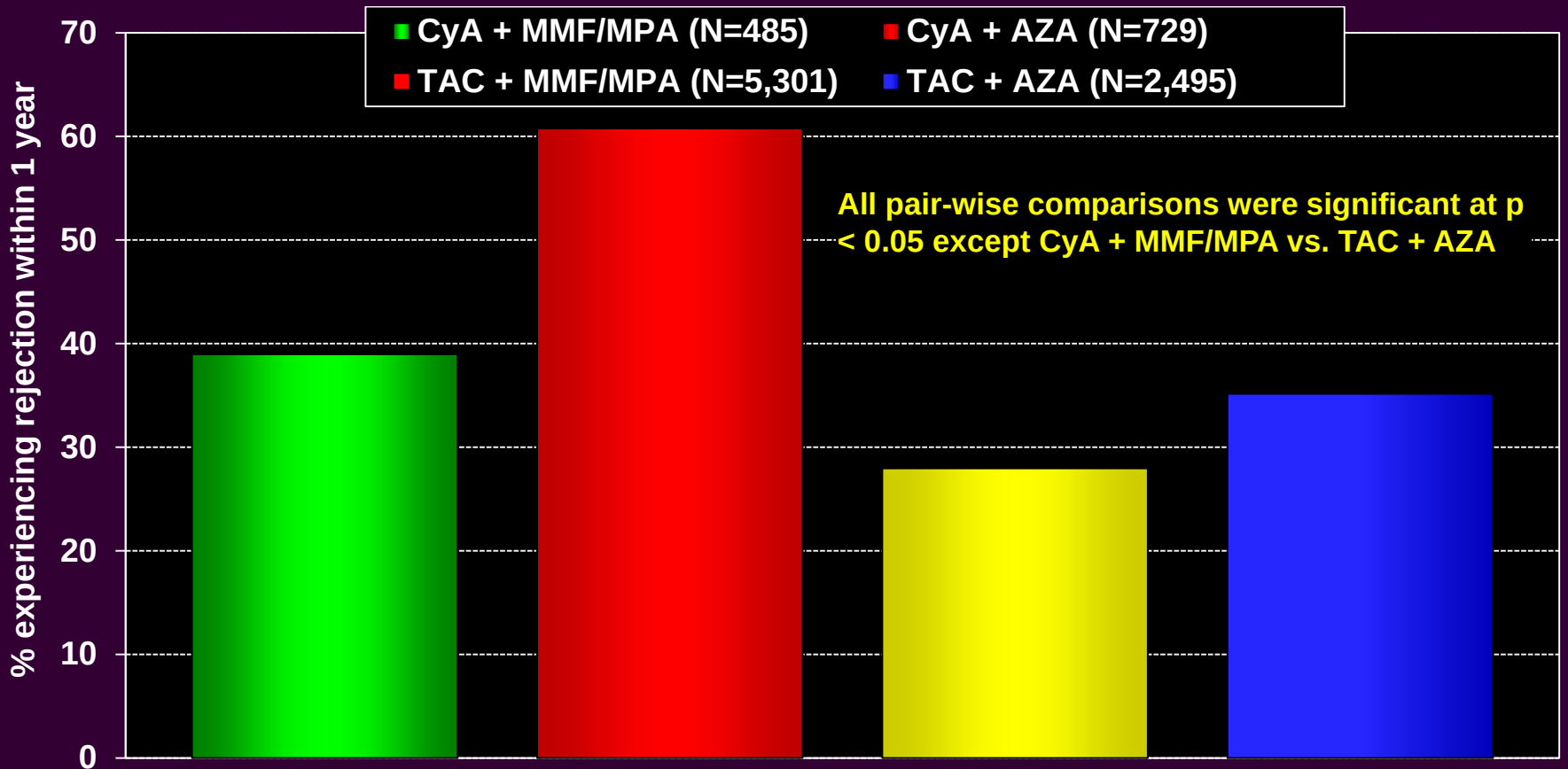

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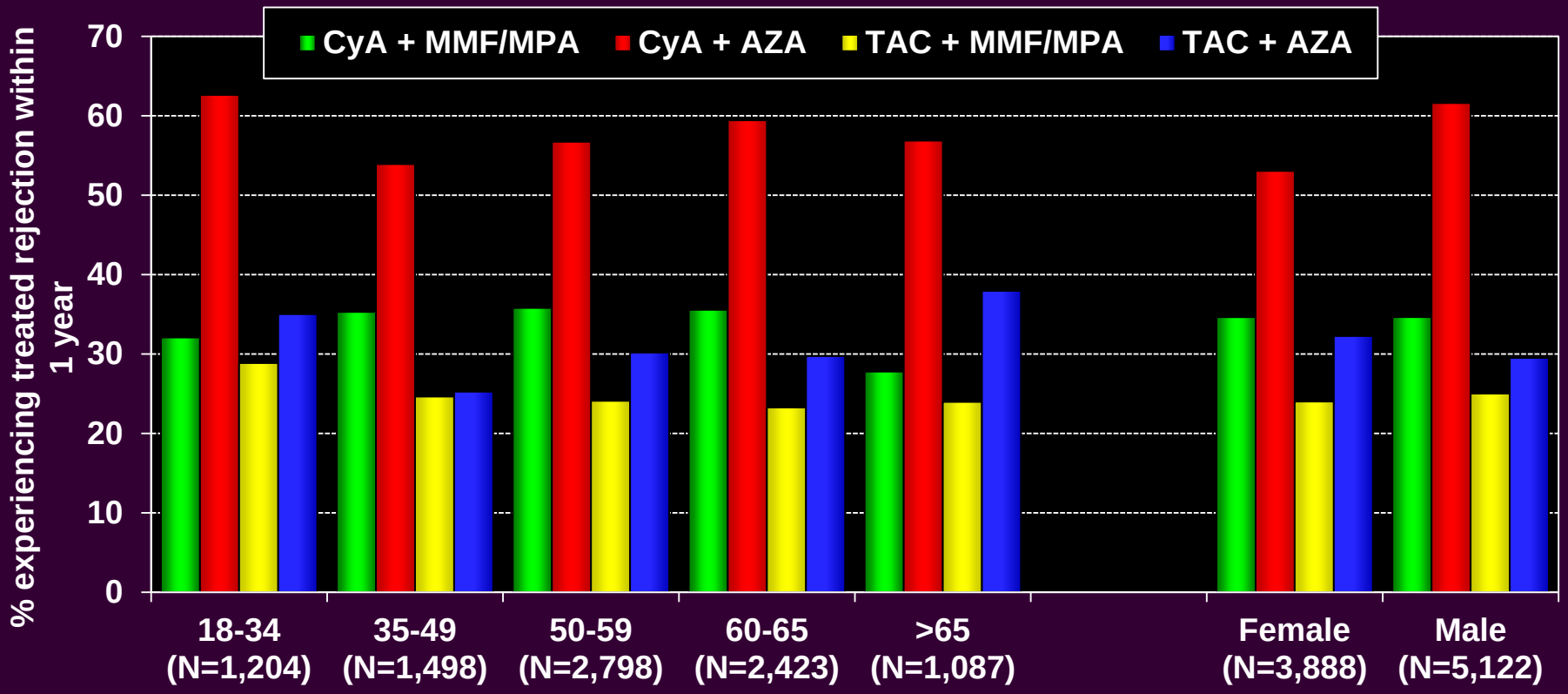

CyA + MMF/MPA vs. CyA + AZA (except 35-49 and >65 years), CyA + MMF/MPA vs. TAC + MMF/MPA (50-59, female and male), CyA + AZA vs. TAC + MMF/MPA, CyA + AZA vs. TAC + AZA (except >65 years), and TAC + MMF/MPA vs. TAC + AZA (>65 years and female) were significant at $p < 0.05$. No other pair-wise comparisons were significant.

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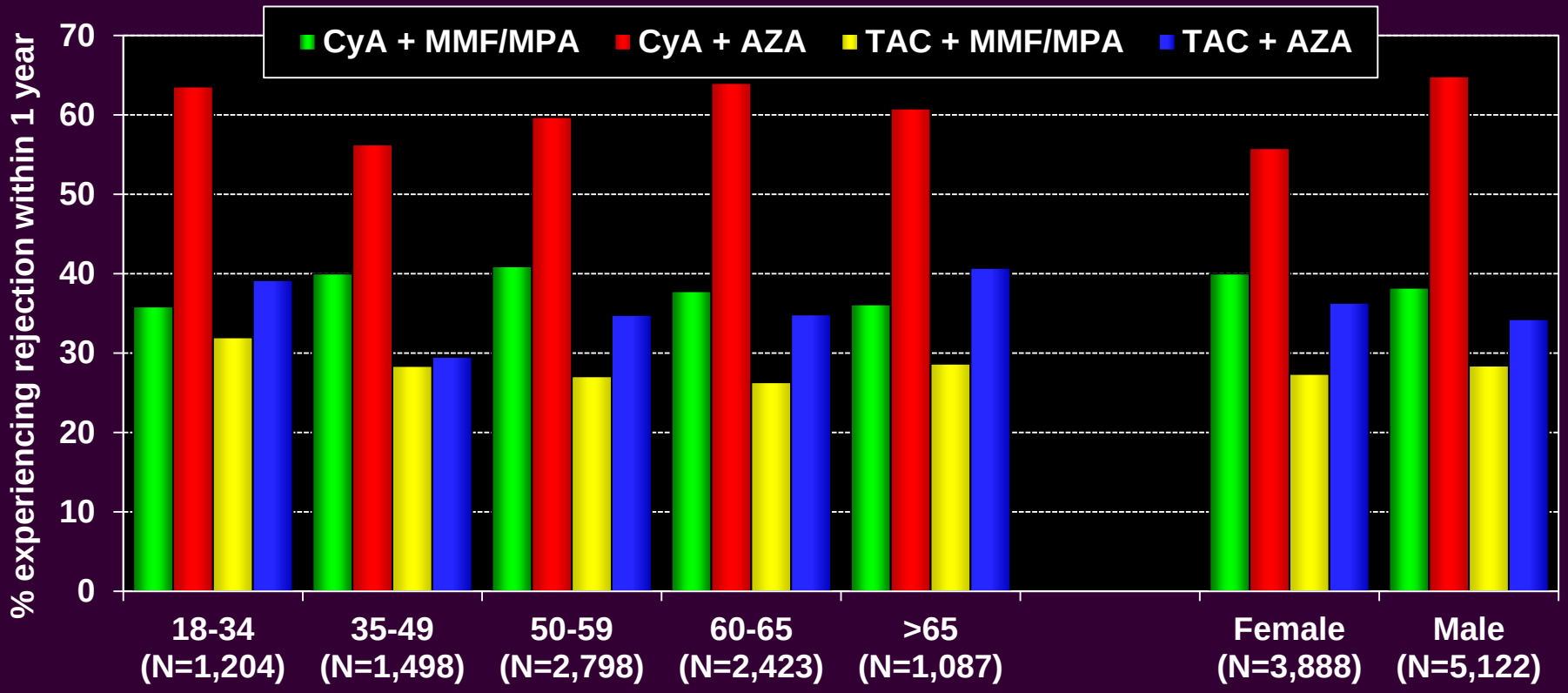
(Follow-ups: July 2004 – June 2012)



CyA + MMF/MPA vs. CyA + AZA (except 35-49 and >65 years), CyA + MMF/MPA vs. TAC + MMF/MPA (50-59 and male), CyA + AZA vs. TAC + MMF/MPA, CyA + AZA vs. TAC + AZA (except >65 years), and TAC + MMF/MPA vs. TAC + AZA (except 18-34 and 34-49 years) were significant at $p < 0.05$. No other pair-wise comparisons were significant.

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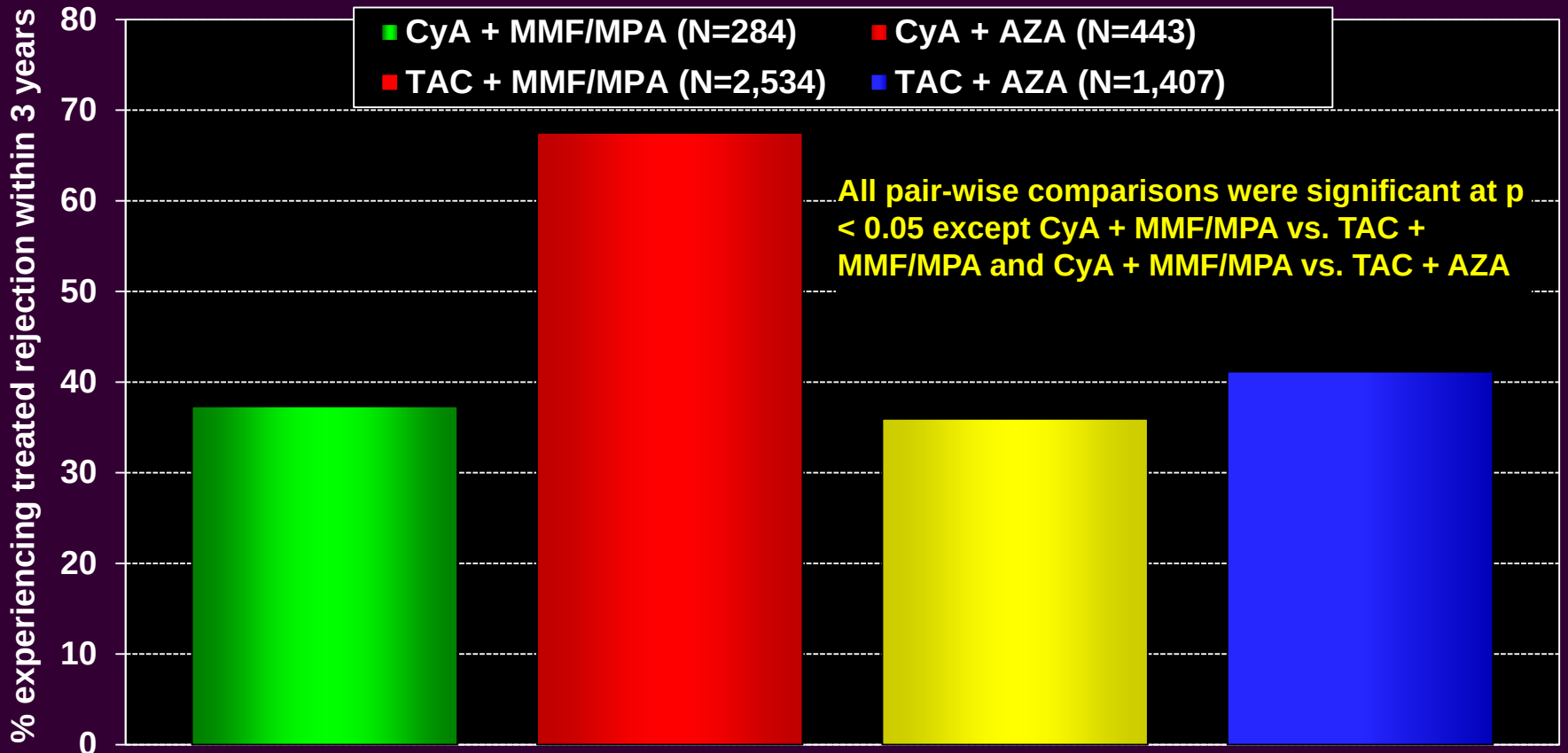
Percentage Experiencing Treated Rejection between Discharge and 3-Year Follow-Up by Maintenance Immunosuppression

(Follow-ups: July 2004 – June 2012)



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Adult Lung Transplants

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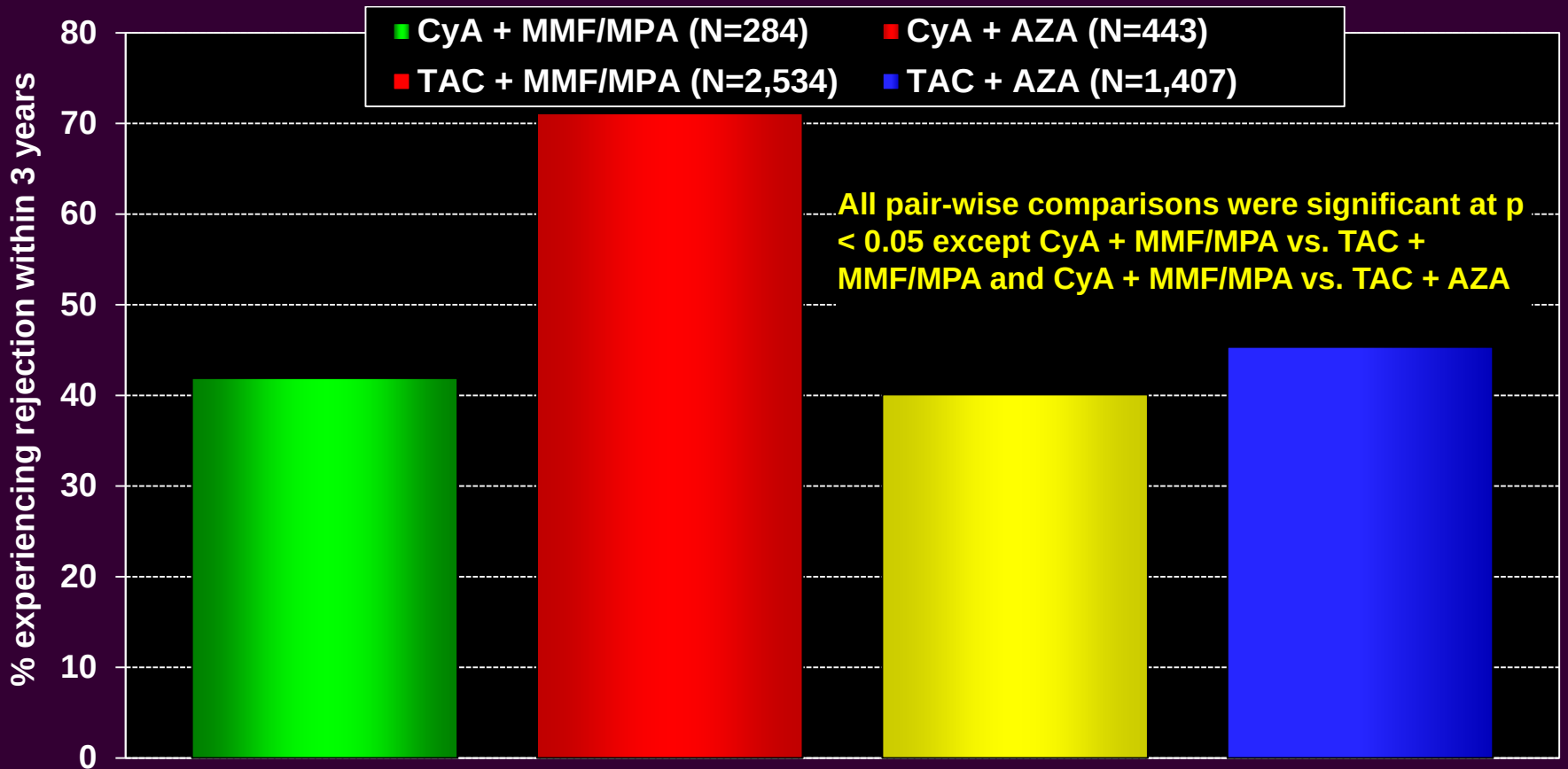
(Follow-ups: July 2004 – June 2012)



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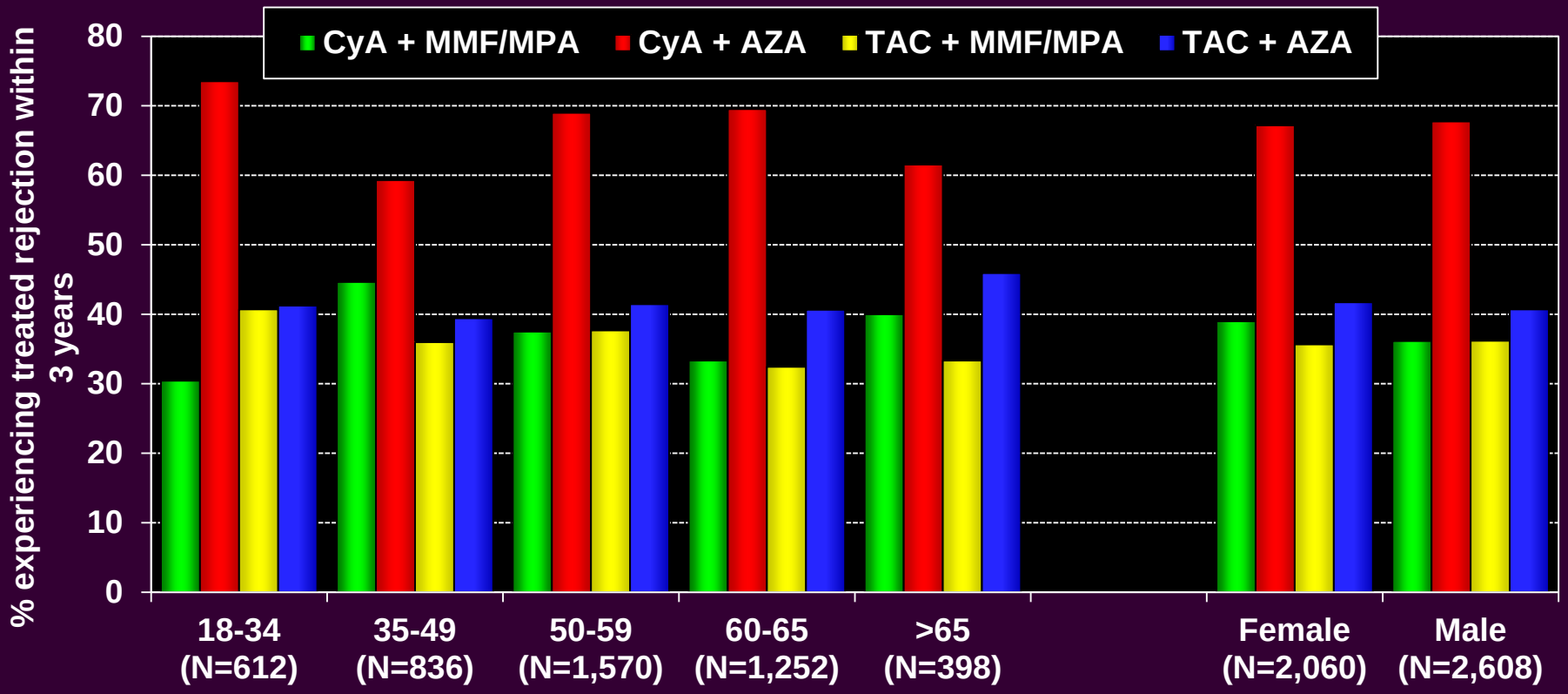

CyA + MMF/MPA vs. CyA + AZA (except 35-49 and >65 years), CyA + AZA vs. TAC + MMF/MPA (except >65 years), and CyA + AZA vs. TAC + AZA (except 35-49 and >65 years) were significant at $p < 0.05$. No other pair-wise comparisons were significant.

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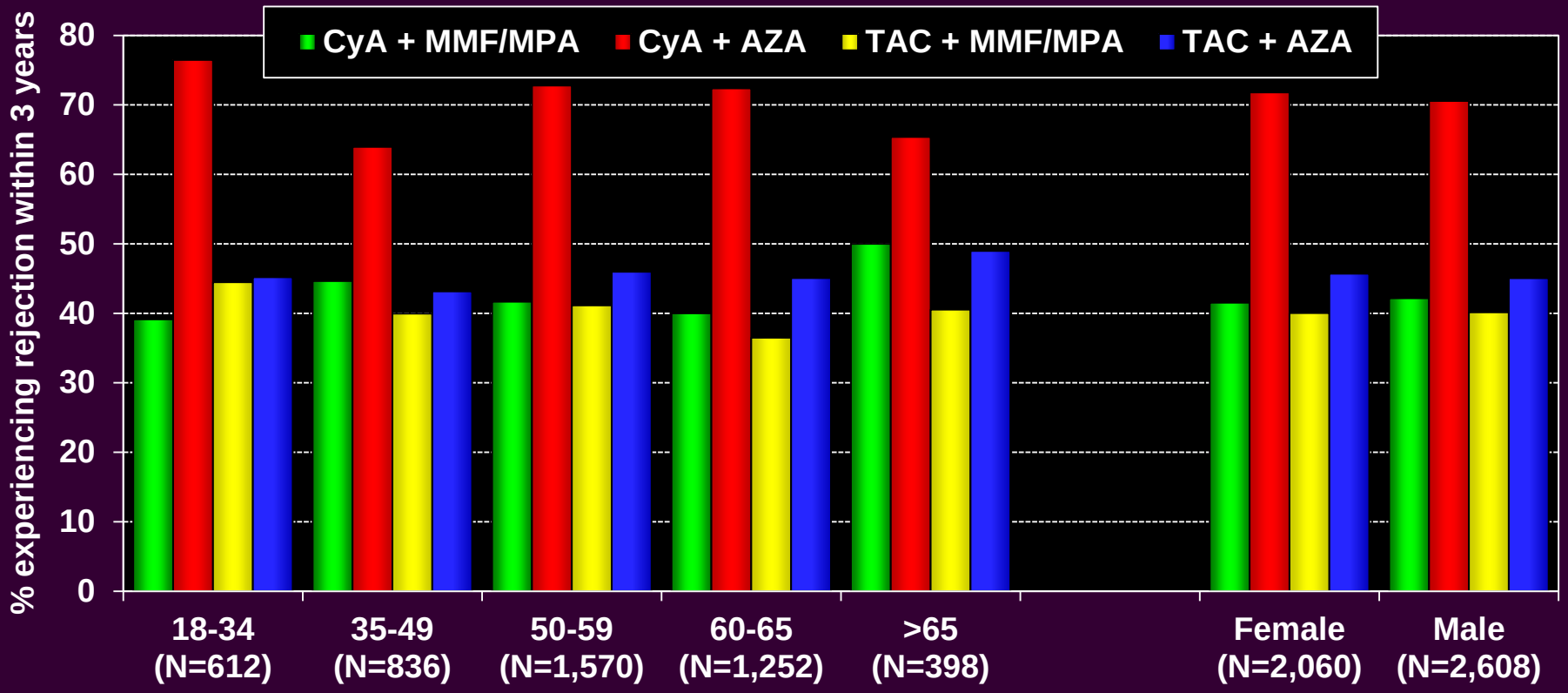
(Follow-ups: July 2004 – June 2012)



CyA + MMF/MPA vs. CyA + AZA (except 35-49 and >65 years), CyA + AZA vs. TAC + MMF/MPA (except >65 years), and CyA + AZA vs. TAC + AZA (except >65 years) were significant at $p < 0.05$. No other pair-wise comparisons were significant.

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Post-Transplant Morbidities

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Adult Lung Transplants

Cumulative Morbidity Rates in Survivors within 1 Year Post-Transplant (Follow-ups: April 1994 – June 2012)

Outcome	Follow-ups: April 1994 – June 2003		Follow-ups: July 2003– June 2012	
	Within 1 Year	Total number with known response	Within 1 Year	Total number with known response
Hypertension	50.7%	(N = 6,021)	52.4%	(N = 9,246)
Renal Dysfunction	26.1%	(N = 6,012)	21.8%	(N = 11,279)
Abnormal Creatinine ≤ 2.5 mg/dl	*15.9%*		*16.5%*	
Creatinine > 2.5 mg/dl	*8.3%*		*3.6%*	
Chronic Dialysis	*1.9%*		*1.6%*	
Renal Transplant	*0.0%*		*0.1%*	
Hyperlipidemia	16.5%	(N = 6,292)	31.3%	(N = 9,683)
Diabetes	20.1%	(N = 5,987)	27.0%	(N = 11,240)
Bronchiolitis Obliterans Syndrome	9.4%	(N = 5,624)	9.5%	(N = 10,640)

Adult Lung Transplants

Cumulative Morbidity Rates in Survivors within 1 Year Post-Transplant (Follow-ups: April 1994 – June 2012)

Outcome	Age: 18-65 years		Age: >65 years	
	Within 1 Year	Total number with known response	Within 1 Year	Total number with known response
Hypertension	51.4%	(N = 14,128)	55.7%	(N = 1,139)
Renal Dysfunction	23.3%	(N = 15,856)	23.6%	(N = 1,435)
Abnormal Creatinine ≤ 2.5 mg/dl	*16.3%*		*16.1%*	
Creatinine > 2.5 mg/dl	*5.3%*		*4.5%*	
Chronic Dialysis	*1.6%*		*2.9%*	
Renal Transplant	*0.1%*		*0.0%*	
Hyperlipidemia	24.5%	(N = 14,778)	38.1%	(N = 1,197)
Diabetes	24.9%	(N = 15,798)	21.3%	(N = 1,429)
Bronchiolitis Obliterans Syndrome	9.7%	(N = 14,896)	7.3%	(N = 1,368)

Adult Lung Transplants
Cumulative Morbidity Rates in Survivors within 1 and 5 Years Post-Transplant (Follow-ups: April 1994 – June 2012)

Outcome	Within 1 Year	Total number with known response	Within 5 Years	Total number with known response
Hypertension	51.7%	(N = 15,267)	82.4%	(N = 4,503)
Renal Dysfunction	23.3%	(N = 17,291)	55.4%	(N = 5,571)
Abnormal Creatinine ≤ 2.5 mg/dl	*16.2%*		*36.5%*	
Creatinine > 2.5 mg/dl	*5.2%*		*15.0%*	
Chronic Dialysis	*1.7%*		*3.2%*	
Renal Transplant	*0.1%*		*0.7%*	
Hyperlipidemia	25.5%	(N = 15,975)	58.4%	(N = 4,856)
Diabetes	24.6%	(N = 17,227)	40.5%	(N = 5,498)
Bronchiolitis Obliterans Syndrome	9.5%	(N = 16,264)	39.7%	(N = 4,701)

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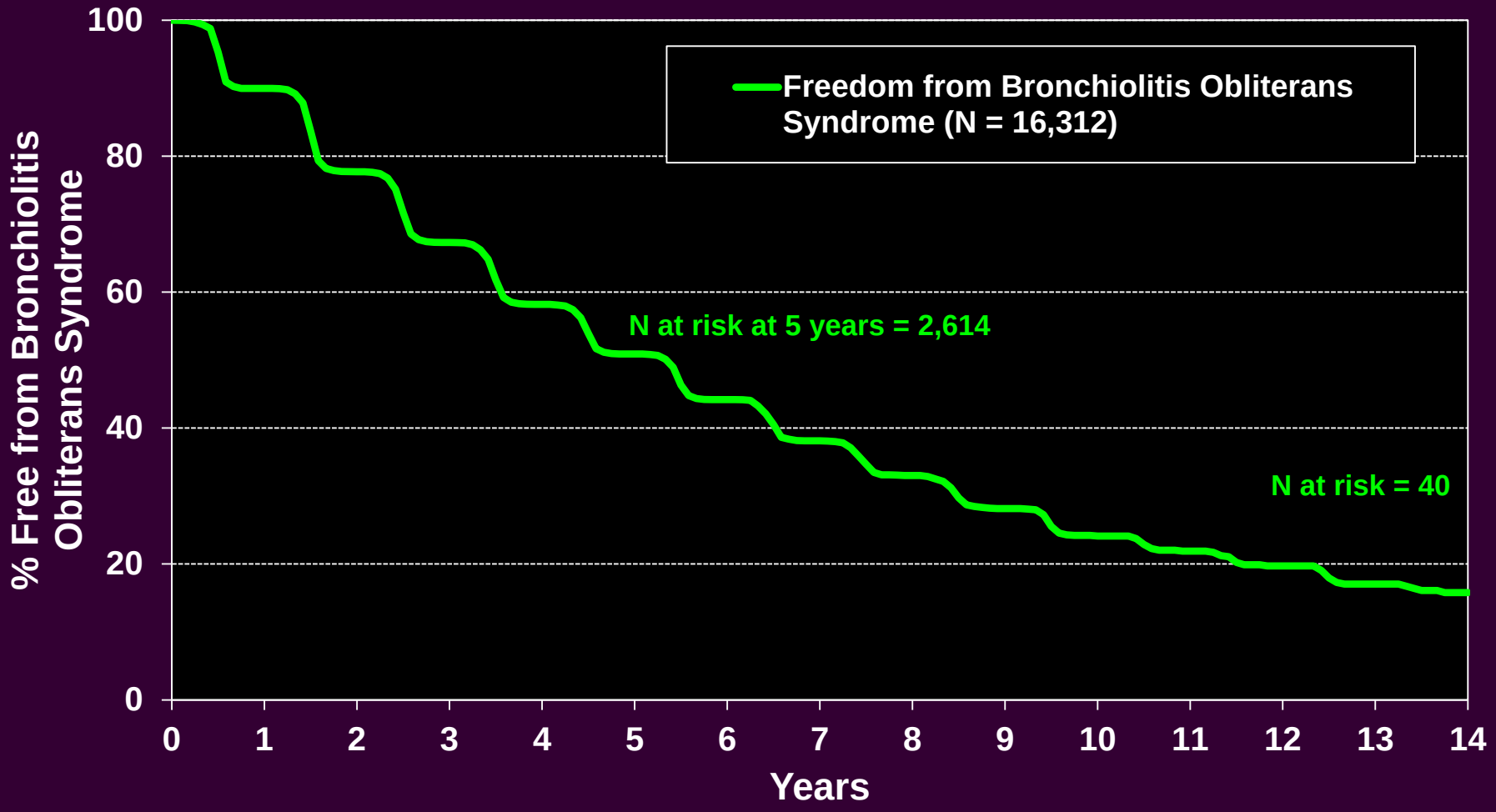
Adult Lung Transplants
Morbidity Rates in Survivors within 10 Years Post-Transplant (Follow-ups: April 1994 – June 2012)

Outcome	Within 10 Years	Total number with known response
Renal Dysfunction	74.1%	(N = 1,059)
Abnormal Creatinine ≤ 2.5 mg/dl	*40.3%*	
Creatinine > 2.5 mg/dl	*19.8%*	
Chronic Dialysis	*8.7%*	
Renal Transplant	*5.3%*	
Bronchiolitis Obliterans Syndrome	61.6%	(N = 774)

Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome
Conditional on Survival to 14 days (Follow-ups: April 1994 – June 2012)



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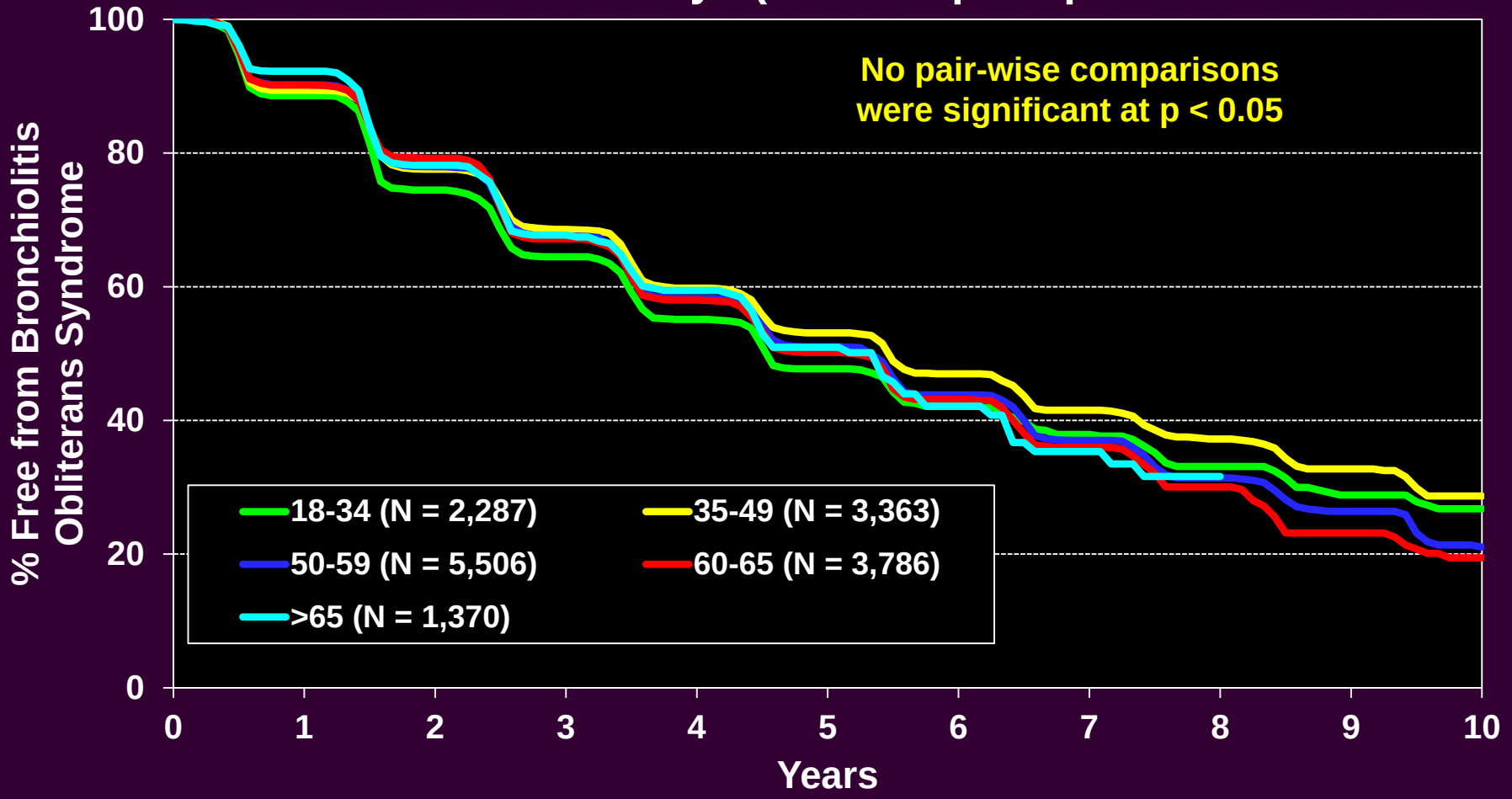
Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome Stratified by Age Group
Conditional on Survival to 14 days (Follow-ups: April 1994 – June 2012)



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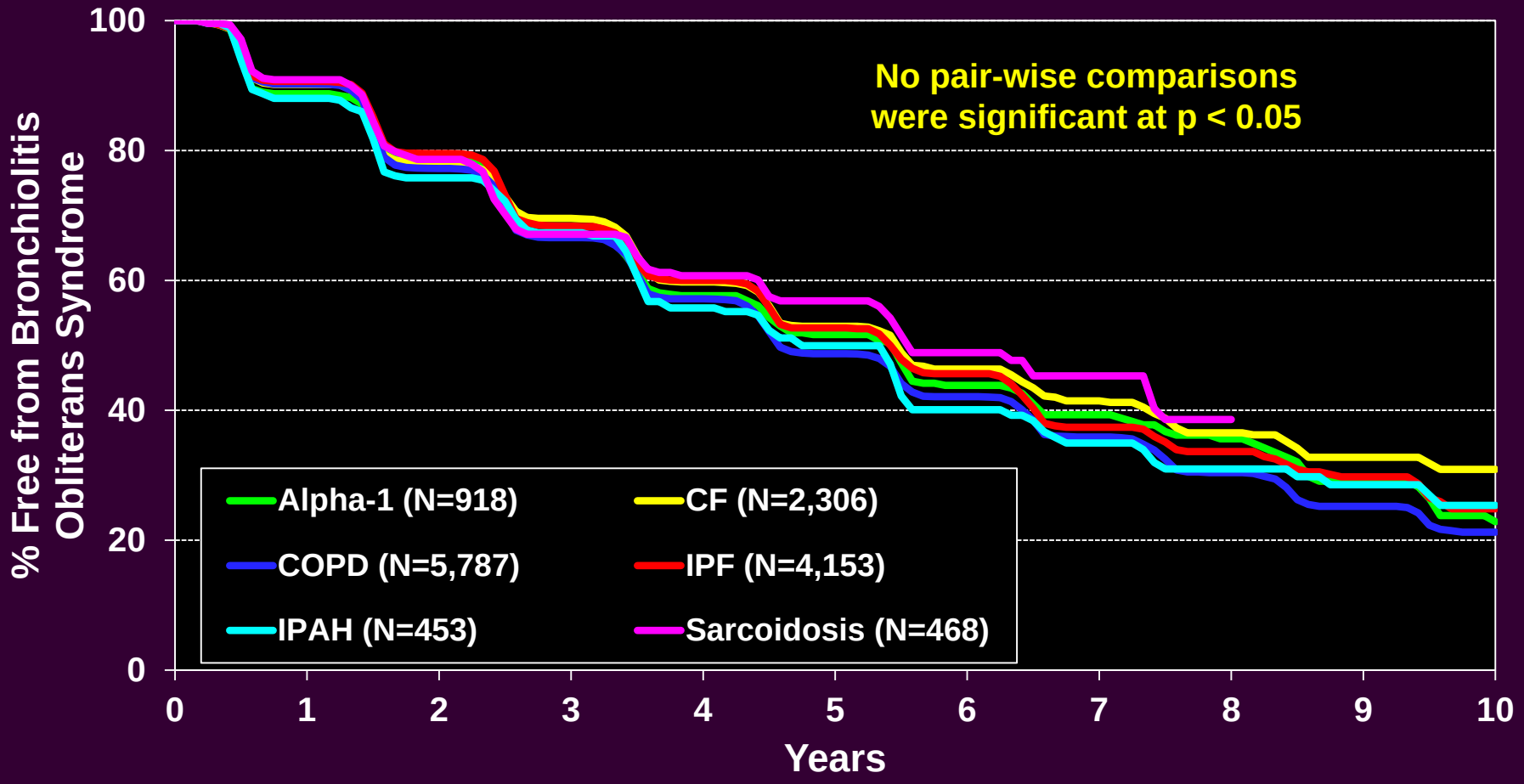
Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome Stratified by Diagnosis
Conditional on Survival to 14 days (Follow-ups: April 1994 – June 2012)



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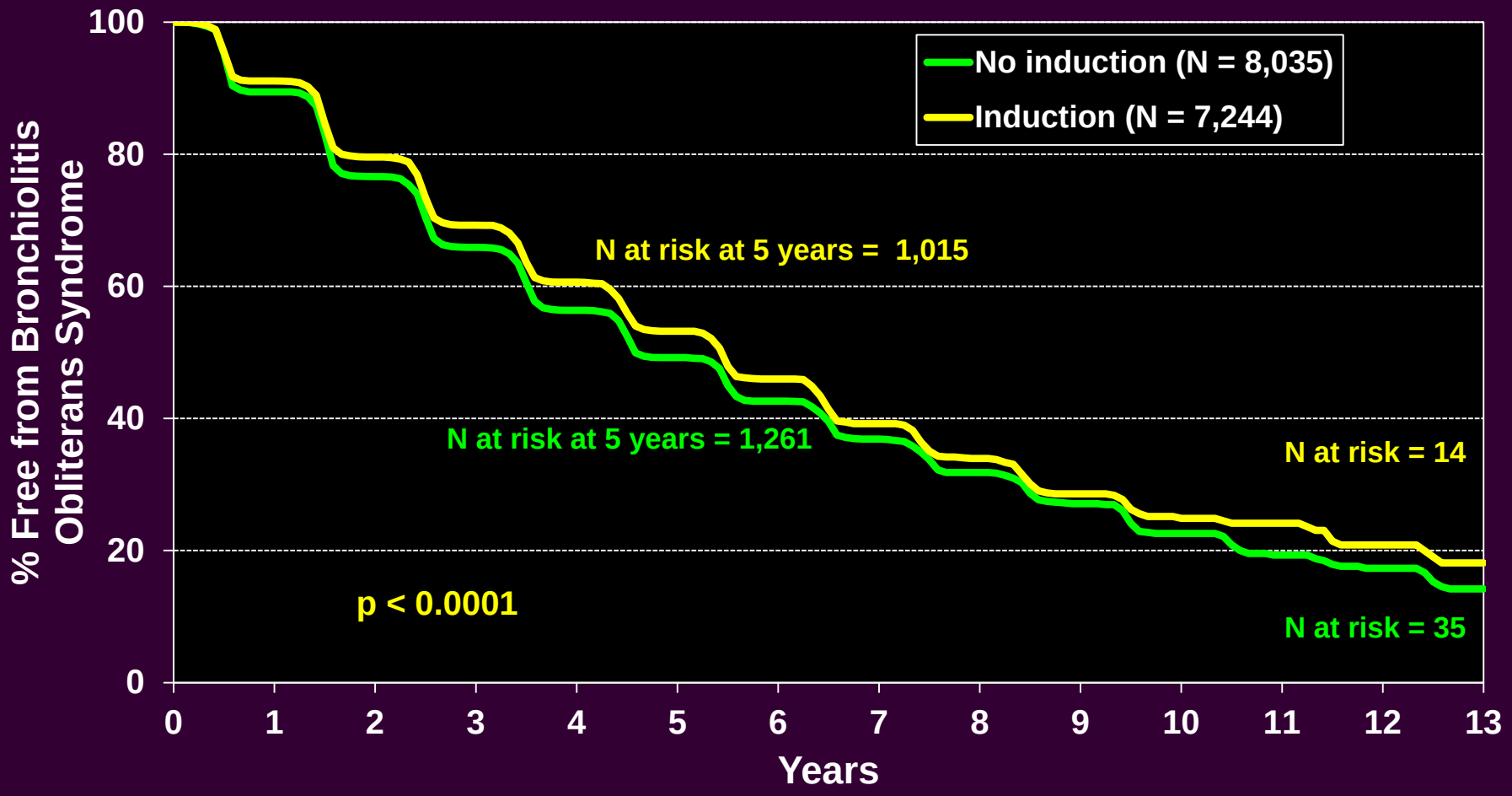
Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome
Stratified by Induction Use
Conditional on Survival to 14 days (Follow-ups: April 1994 – June 2012)



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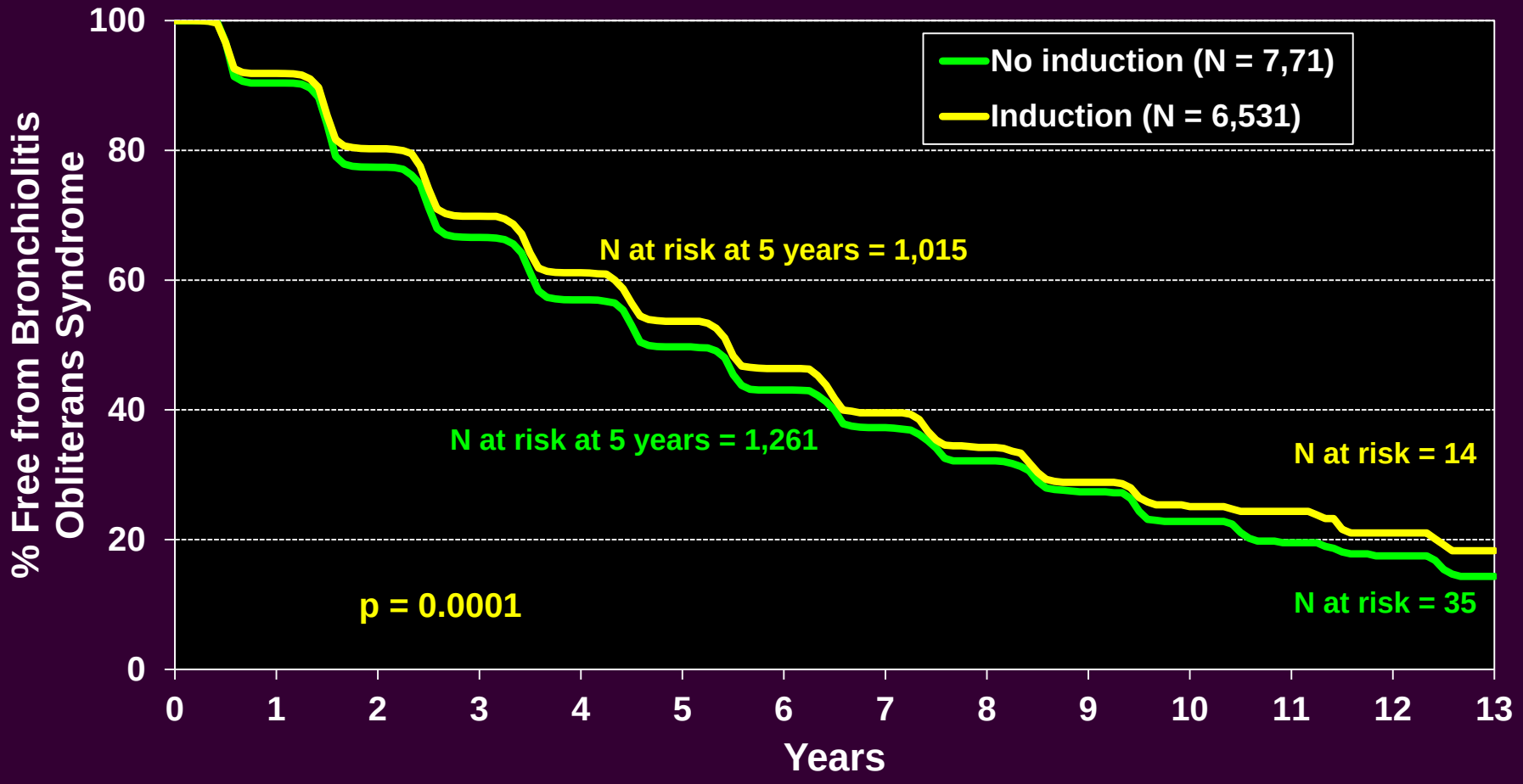
Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome Stratified by Induction Use
Conditional on Survival to 1 Year (Follow-ups: April 1994 – June 2012)



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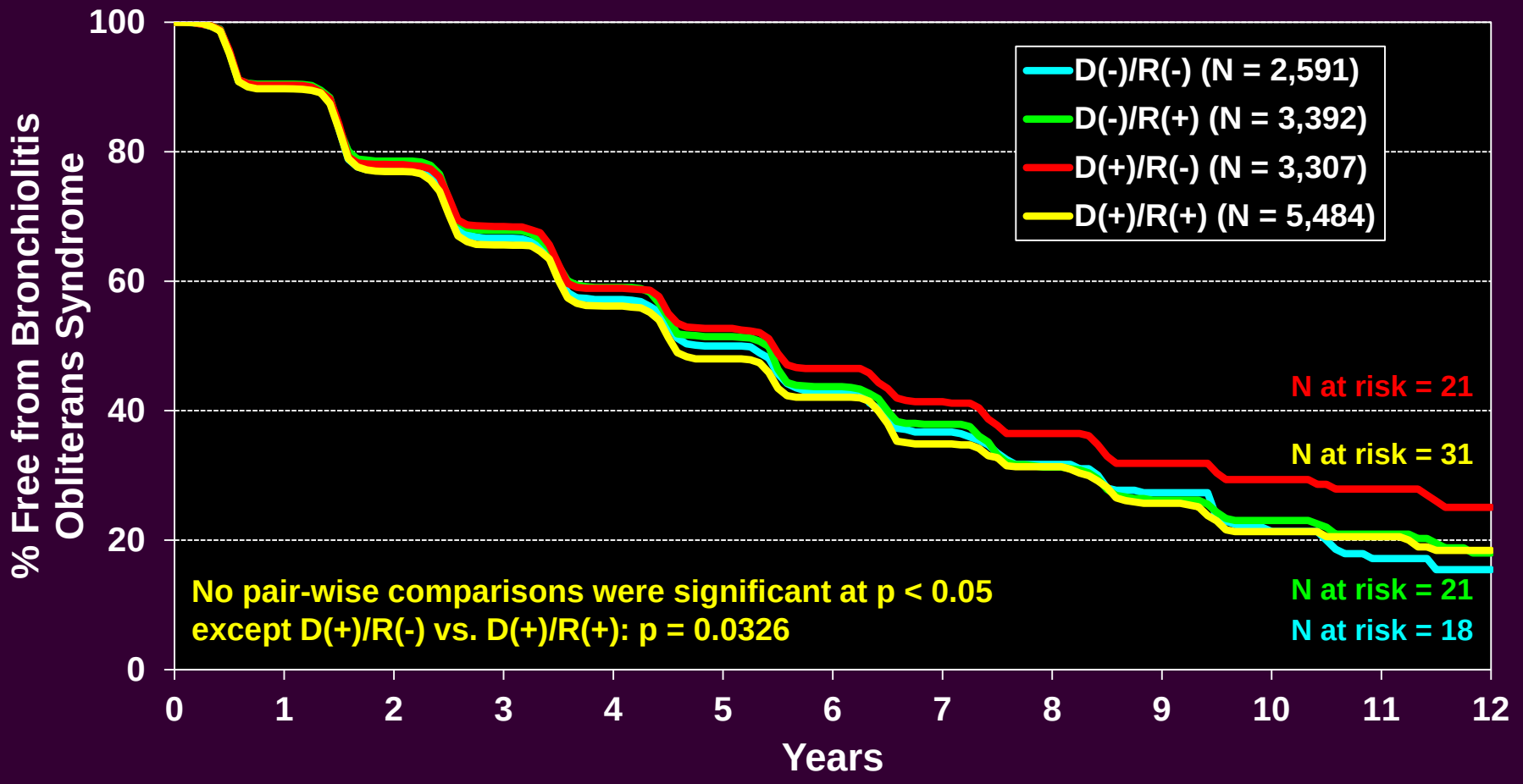
Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome by Donor/Recipient CMV Status
Conditional on Survival to 14 Days (Follow-ups: April 1994 – June 2012)



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Adult Lung Transplants
Freedom from Bronchiolitis Obliterans Syndrome by Donor/Recipient CMV Status
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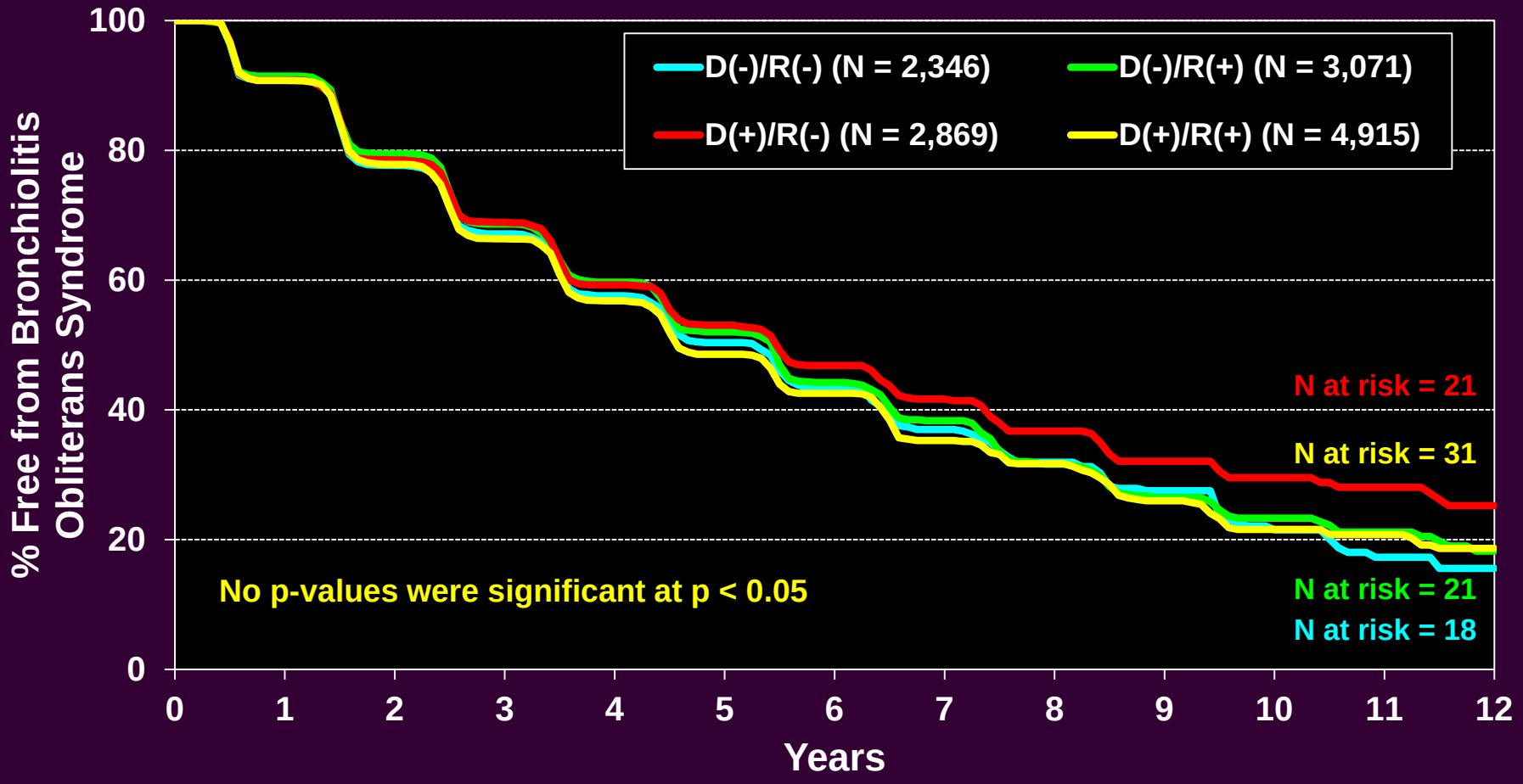

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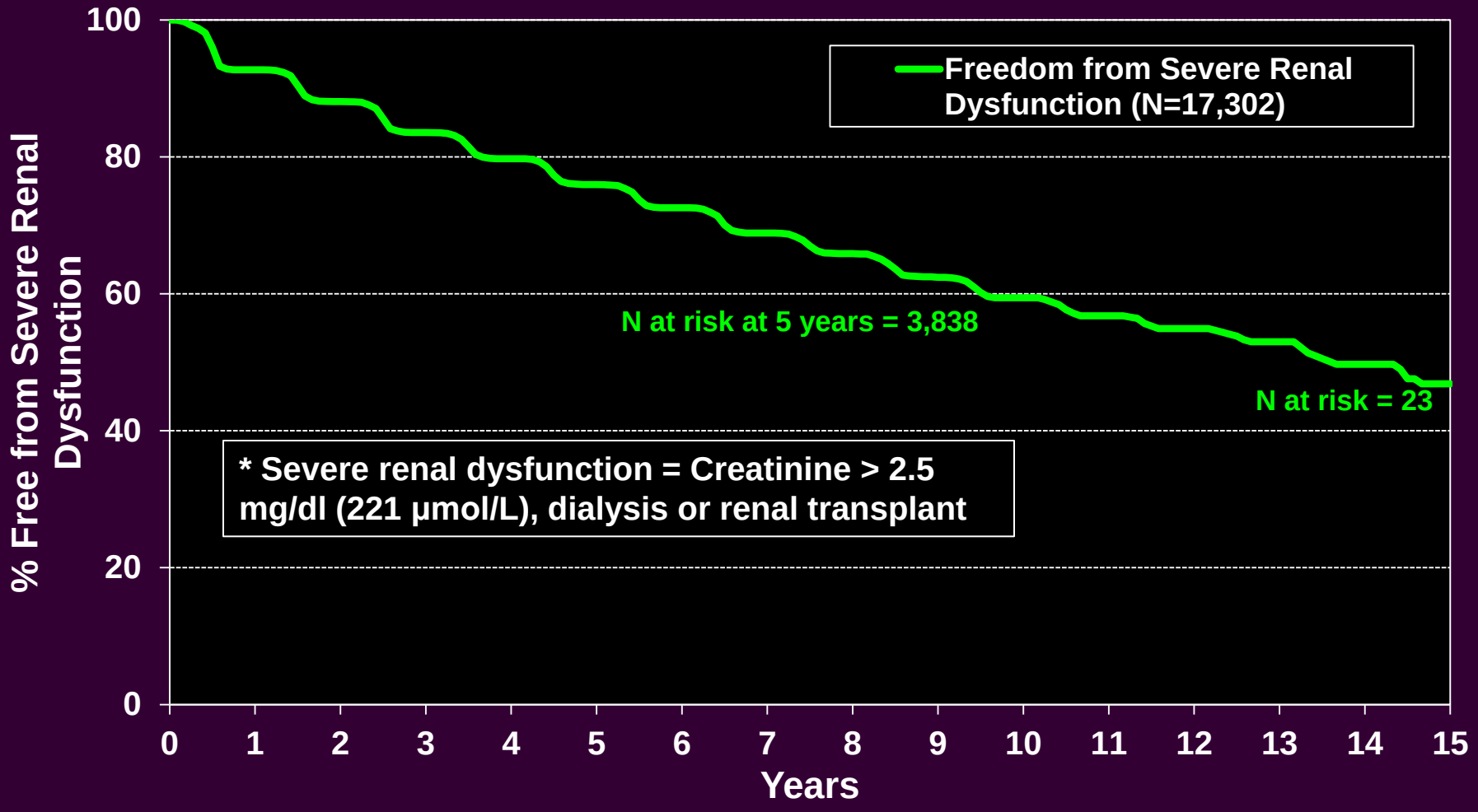
Adult Lung Transplants
Freedom from Severe Renal Dysfunction*
(Follow-ups: April 1994 – June 2012)



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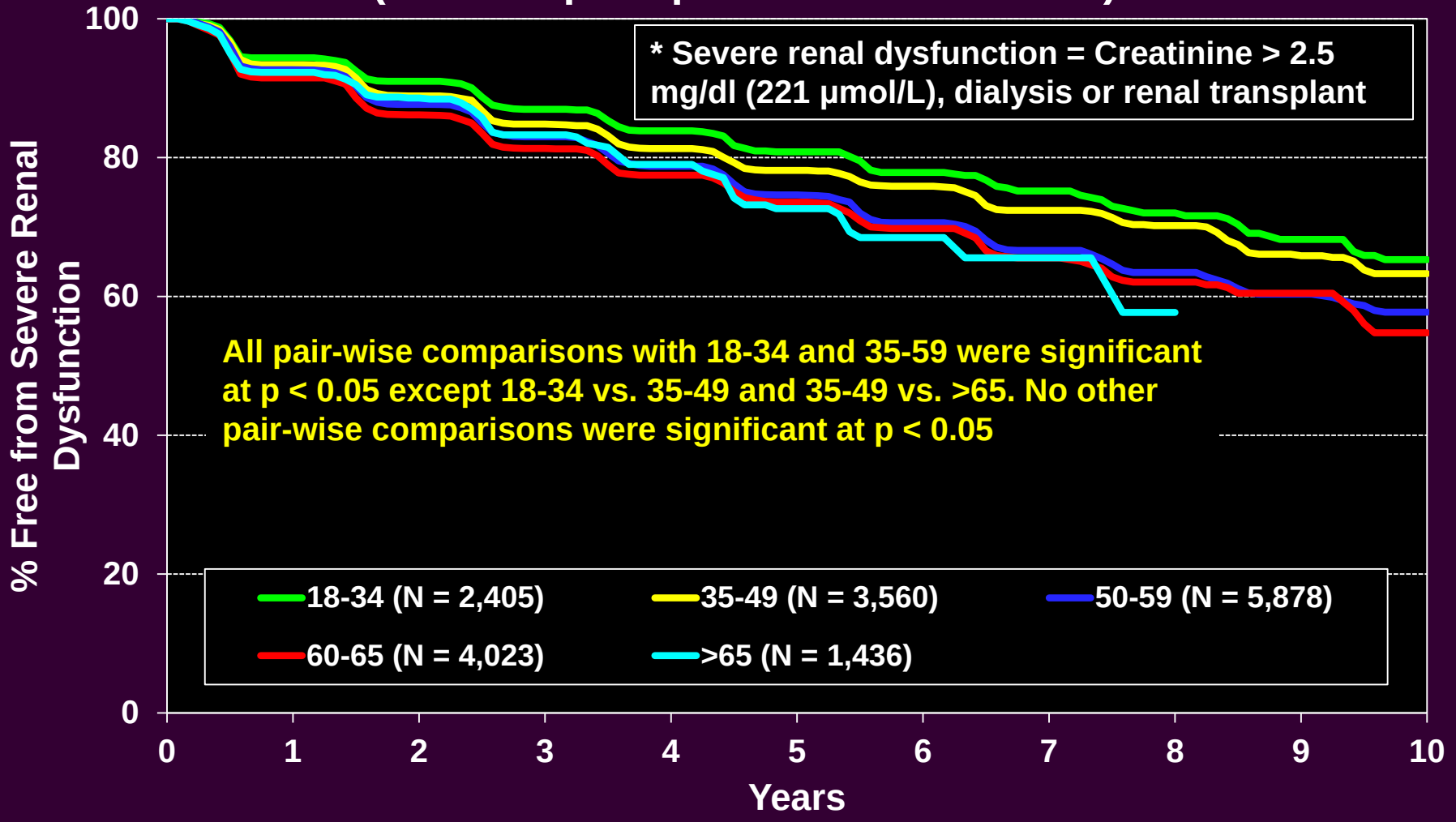
Adult Lung Transplants

Freedom from Severe Renal Dysfunction* by Age Group

(Follow-ups: April 1994 – June 2012)



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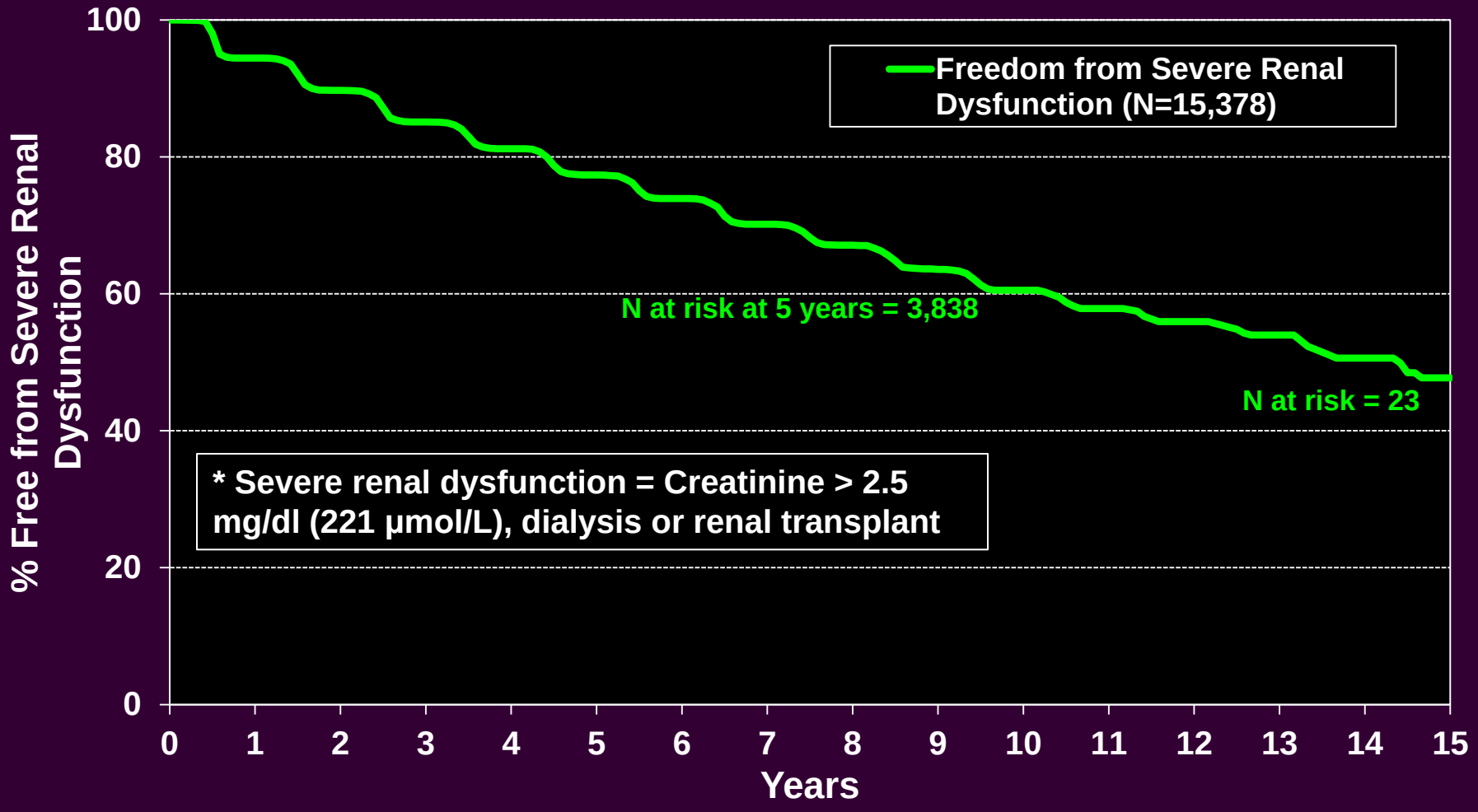
Adult Lung Transplants
Freedom from Severe Renal Dysfunction*
Conditional on Survival to 1 Year (Follow-ups: April 1994 – June 2012)



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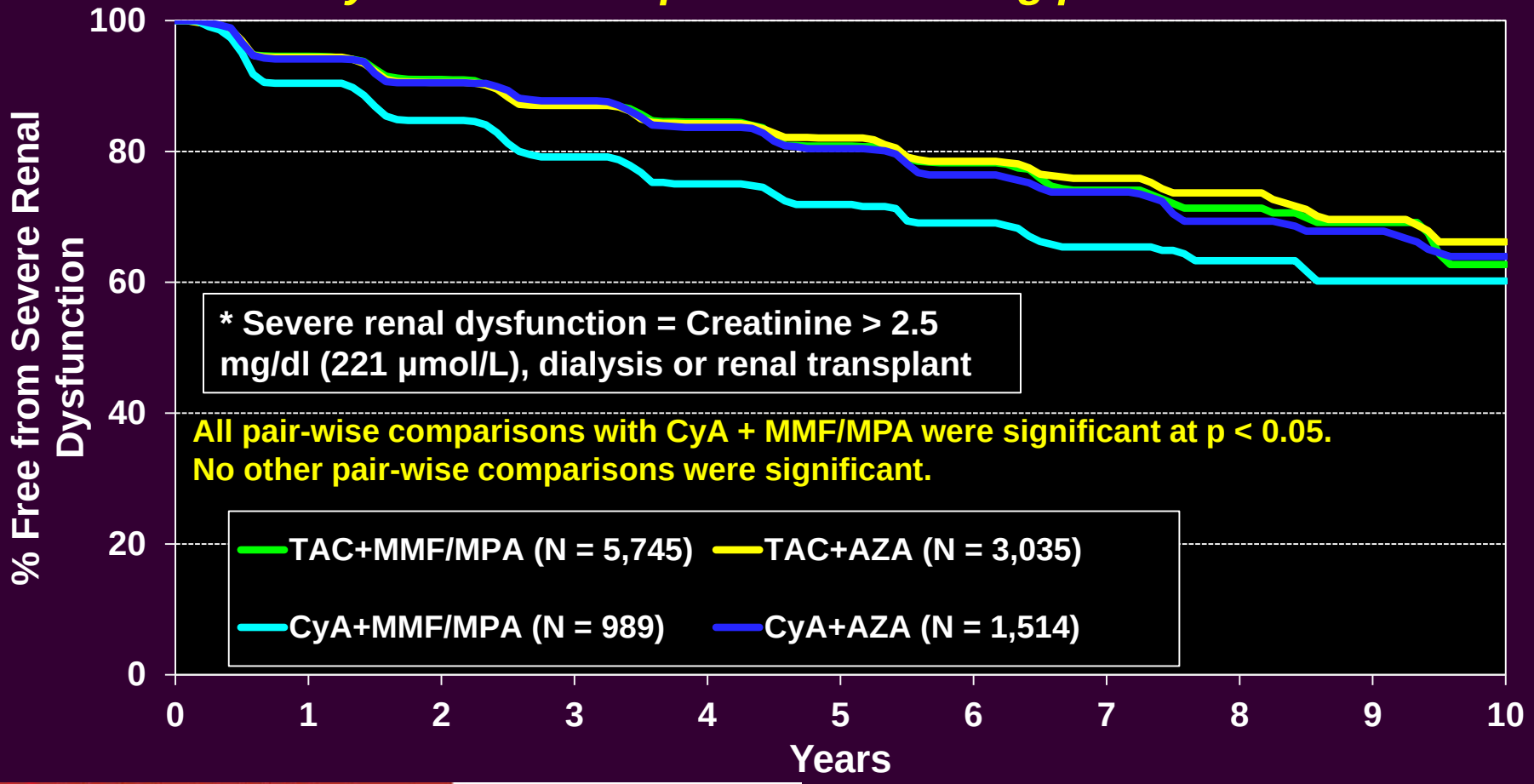
Adult Lung Transplants

Freedom from Severe Renal Dysfunction* by Maintenance Immunosuppression Combinations at Discharge

Conditional on Survival to 14 Days (Transplants: January 2000 – June 2011)

Analysis limited to patients receiving prednisone



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Adult Lung Transplants

Post Transplant Malignancy (Follow-ups: April 1994 – June 2012)

Cumulative Morbidity Rates in Survivors

Malignancy/Type		1-Year Survivors	5-Year Survivors	10-Year Survivors
No Malignancy		17,068 (96.4%)	5,040 (85.3%)	883 (73.2%)
Malignancy (all types combined)		630 (3.6%)	871 (14.7%)	324 (26.8%)
*Malignancy Type**	*Skin*	*199*	*590*	*226*
	Lymphoma	*243*	*94*	*38*
	Other	*164*	*227*	*93*
	Type Not Reported	*24*	*9*	*0*

Other malignancies reported include: adenocarcinoma (2; 2; 1), bladder (2; 1; 0), lung (2; 4; 0), breast (1; 5; 2); prostate (0; 5; 1), cervical (1; 1; 0); liver (1; 1; 1); colon (1; 1; 0). Numbers in parentheses represent the number of reported cases within each time period.

*** Recipients may have experienced more than one type of malignancy so sum of individual malignancy types may be greater than total number with malignancy.**

Adult Lung Transplants

Post Transplant Malignancy (Follow-ups: April 1994 – June 2012)

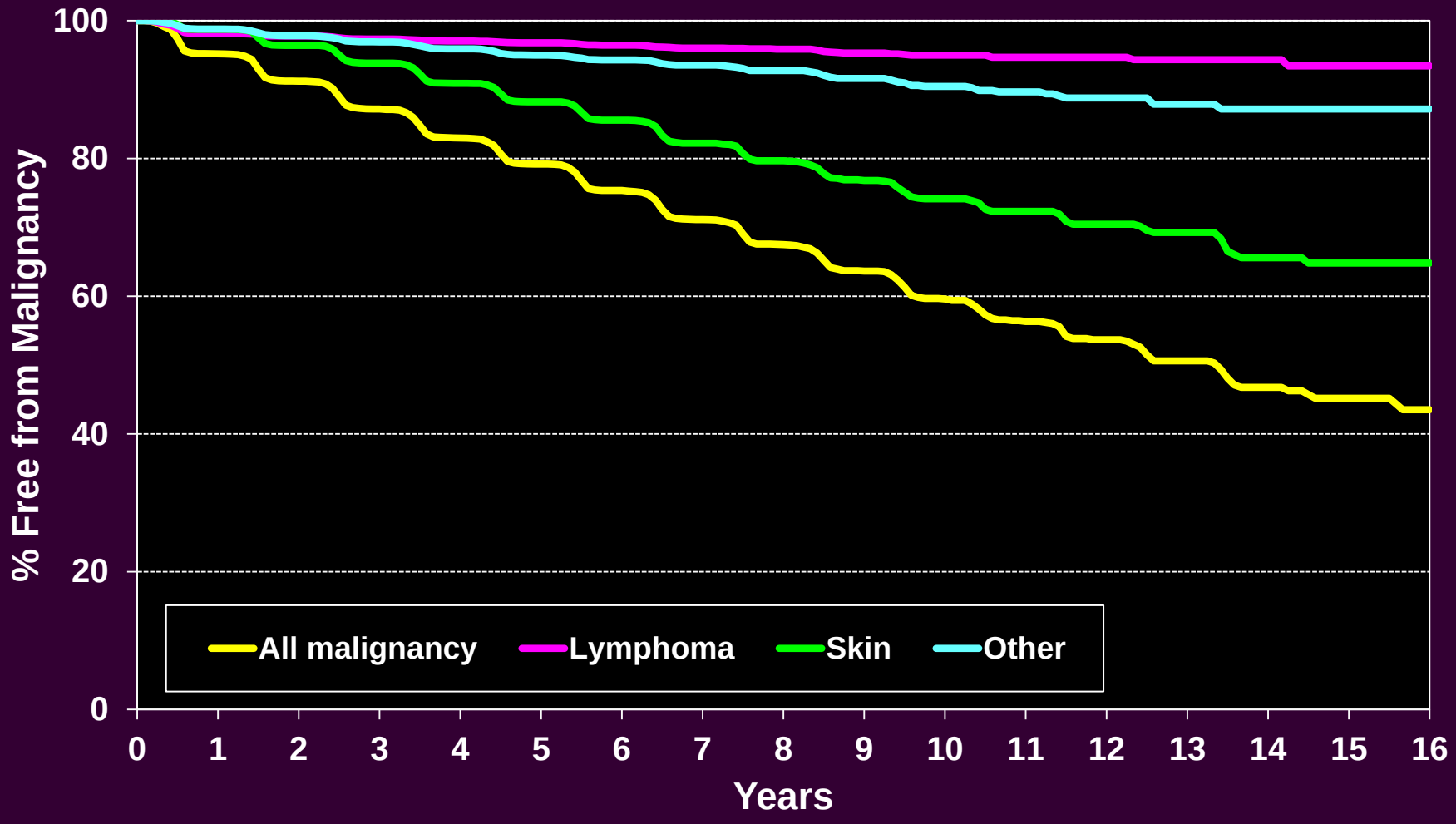
Cumulative Morbidity Rates in Survivors

Malignancy/Type		Age: 18-65 years		Age: >65 years	
		1-Year Survivors	5-Year Survivors	1-Year Survivors	5-Year Survivors
No Malignancy		15,686 (96.6%)	4,904 (85.9%)	1,382 (94.5%)	136 (67.0%)
Malignancy (all types combined)		549 (3.4%)	804 (14.1%)	81 (5.5%)	67 (33.0%)
*Malignancy Type**	*Skin*	*163*	*540*	*36*	*50*
	Lymphoma	*222*	*90*	*21*	*4*
	Other	*142*	*209*	*22*	*18*
	Type Not Reported	*22*	*9*	*2*	*0*

* Recipients may have experienced more than one type of malignancy so sum of individual malignancy types may be greater than total number with malignancy.

Adult Lung Transplants

Freedom from Malignancy (Follow-ups: April 1994 – June 2012)



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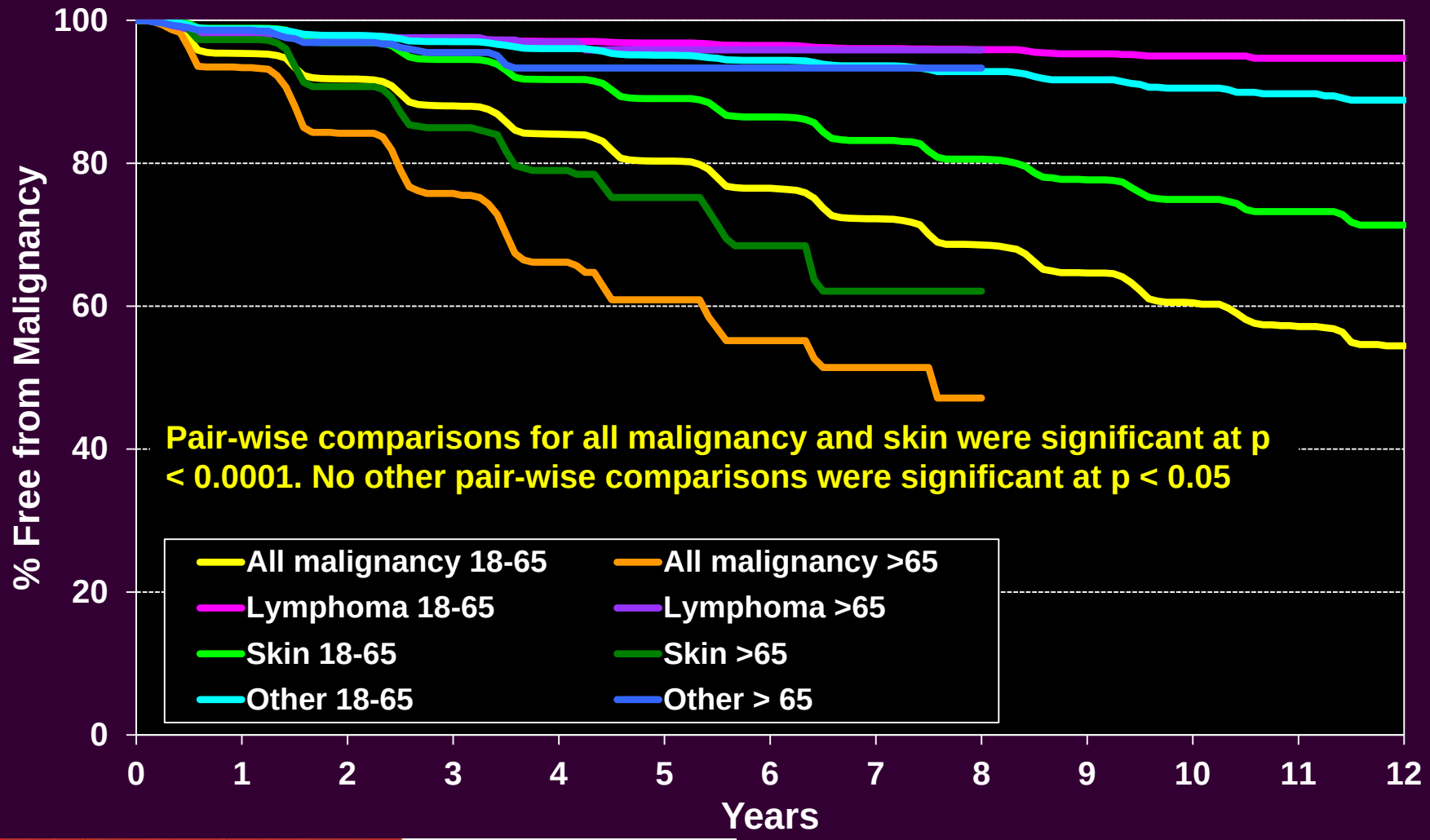
Adult Lung Transplants
Freedom from Malignancy by Age Group
(Follow-ups: April 1994 – June 2012)



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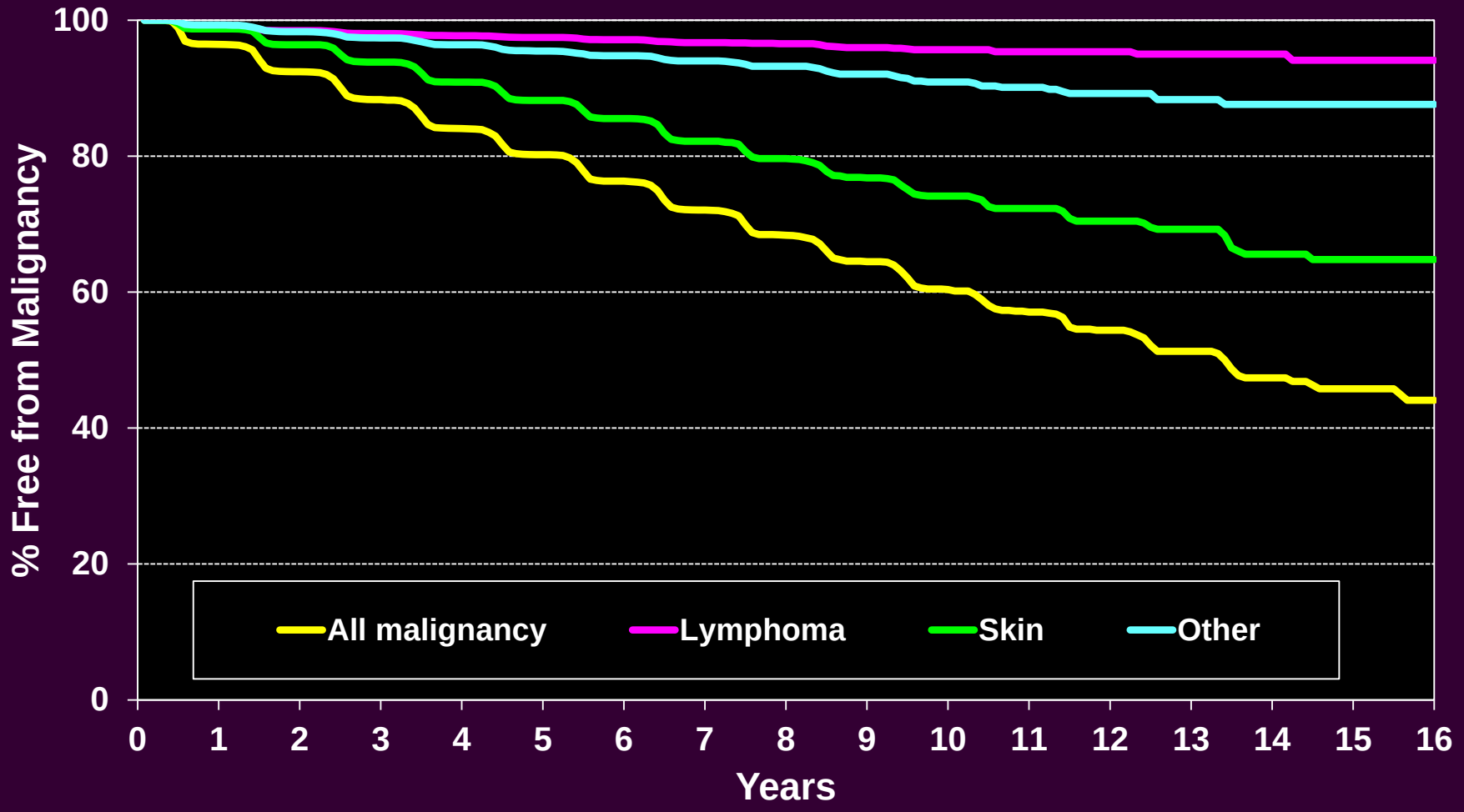
Adult Lung Transplants
Freedom from Malignancy Conditional on Survival to 1 Year
(Follow-ups: April 1994 – June 2012)



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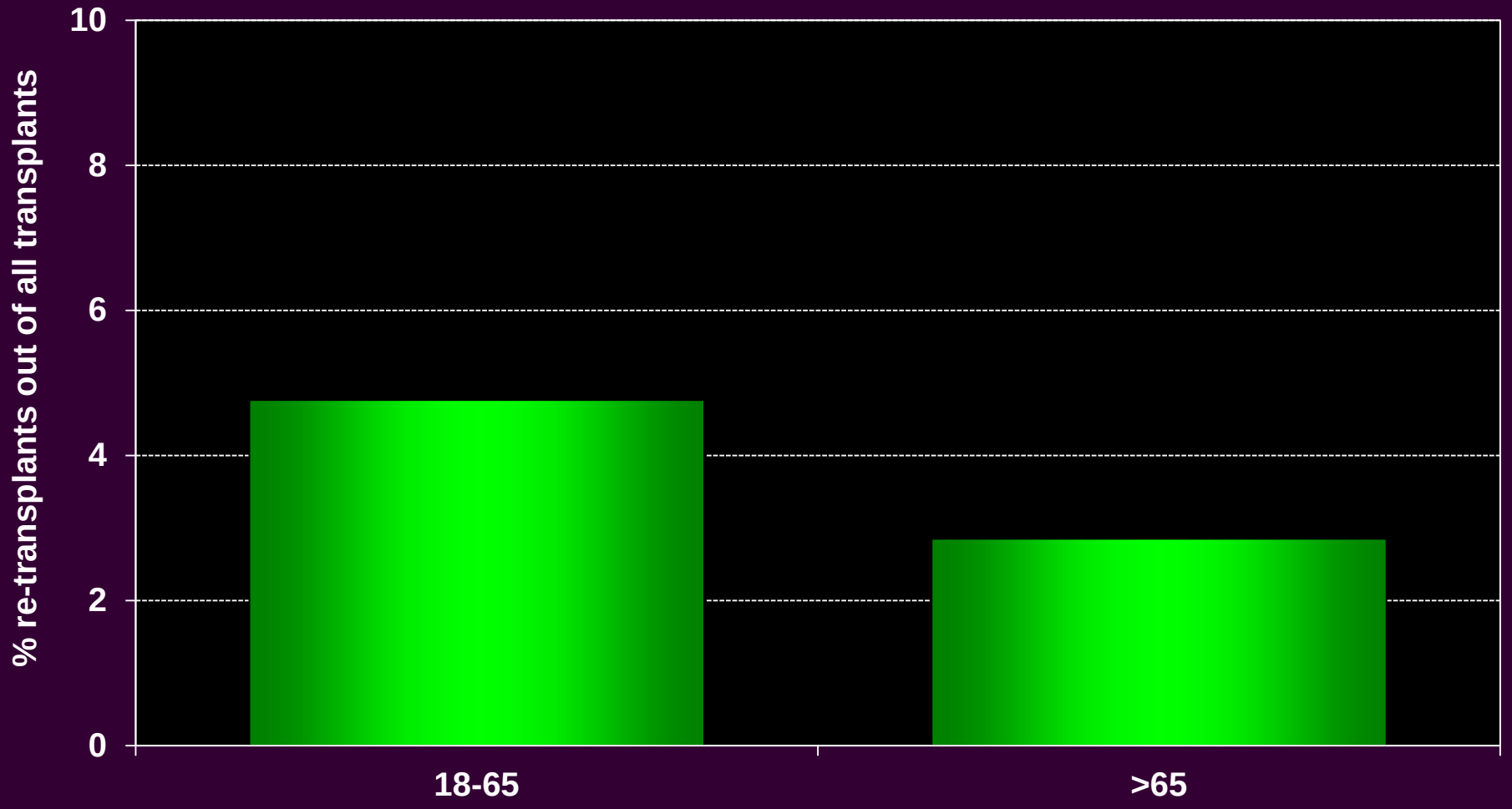
Adult Lung Transplants
% of Re-transplanted Recipients by Age Group
(Transplants: January 2005 – June 2012)



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Adult Lung Transplants

Cause of Death (Deaths: January 1992 – June 2012)

Cause of Death	0-30 Days (N = 2,725)	31 Days - 1 Year (N = 4,737)	>1 Year - 3 Years (N = 4,315)	>3 Years - 5 Years (N = 2,449)	>5 Years – 10 Years (N = 2,892)	>10 Years (N = 899)
Bronchiolitis	8 (0.3%)	216 (4.6%)	1,119 (25.9%)	710 (29.0%)	734 (25.4%)	188 (20.9%)
Acute Rejection	94 (3.4%)	85 (1.8%)	63 (1.5%)	16 (0.7%)	17 (0.6%)	2 (0.2%)
Lymphoma	1 (0.0%)	110 (2.3%)	78 (1.8%)	36 (1.5%)	56 (1.9%)	31 (3.4%)
Malignancy, Non-Lymphoma	5 (0.2%)	134 (2.8%)	329 (7.6%)	266 (10.9%)	379 (13.1%)	113 (12.6%)
CMV	0	112 (2.4%)	42 (1.0%)	7 (0.3%)	4 (0.1%)	1 (0.1%)
Infection, Non-CMV	535 (19.6%)	1,687 (35.6%)	971 (22.5%)	471 (19.2%)	523 (18.1%)	154 (17.1%)
Graft Failure	672 (24.7%)	790 (16.7%)	807 (18.7%)	440 (18.0%)	515 (17.8%)	156 (17.4%)
Cardiovascular	298 (10.9%)	228 (4.8%)	179 (4.1%)	120 (4.9%)	148 (5.1%)	58 (6.5%)
Technical	301 (11.0%)	162 (3.4%)	38 (0.9%)	14 (0.6%)	24 (0.8%)	8 (0.9%)
Other	811 (29.8%)	1,213 (25.6%)	689 (16.0%)	369 (15.1%)	492 (17.0%)	188 (20.9%)

Percentages represent % of deaths in the respective time period

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Adult Lung Transplants
Cause of Death Stratified by Age Group
(Deaths: January 1992 – June 2012)

Age Group	Cause of Death	0-30 Days	31 Days - 1 Year	>1 Year - 3 Years	>3 Years - 5 Years	>5 Years
18-65	Bronchiolitis	8 (0.3%)	201 (4.6%)	1,065 (26.4%)	691 (29.6%)	910 (24.5%)
	Malignancy	5 (0.2%)	220 (5.0%)	361 (8.9%)	275 (11.8%)	569 (15.3%)
	Infection	514 (19.7%)	1,686 (38.3%)	957 (23.7%)	450 (19.3%)	665 (17.9%)
	Graft Failure	644 (24.7%)	724 (16.5%)	757 (18.7%)	422 (18.1%)	661 (17.8%)
	Cardiovascular	280 (10.7%)	198 (4.5%)	161 (4.0%)	113 (4.8%)	200 (5.4%)
	Technical	290 (11.1%)	157 (3.6%)	38 (0.9%)	14 (0.6%)	32 (0.9%)
	All known causes	2,610	4,397	4,040	2,333	3,721
>65	Bronchiolitis	0	15 (4.4%)	54 (19.6%)	19 (16.4%)	12 (17.1%)
	Malignancy	1 (0.9%)	24 (7.1%)	46 (16.7%)	27 (23.3%)	10 (14.3%)
	Infection	21 (18.3%)	113 (33.2%)	56 (20.4%)	28 (24.1%)	17 (24.3%)
	Graft Failure	28 (24.3%)	66 (19.4%)	50 (18.2%)	18 (15.5%)	10 (14.3%)
	Cardiovascular	18 (15.7%)	30 (8.8%)	18 (6.5%)	7 (6.0%)	6 (8.6%)
	Technical	11 (9.6%)	5 (1.5%)	0	0	0
	All known causes	115	340	275	116	70

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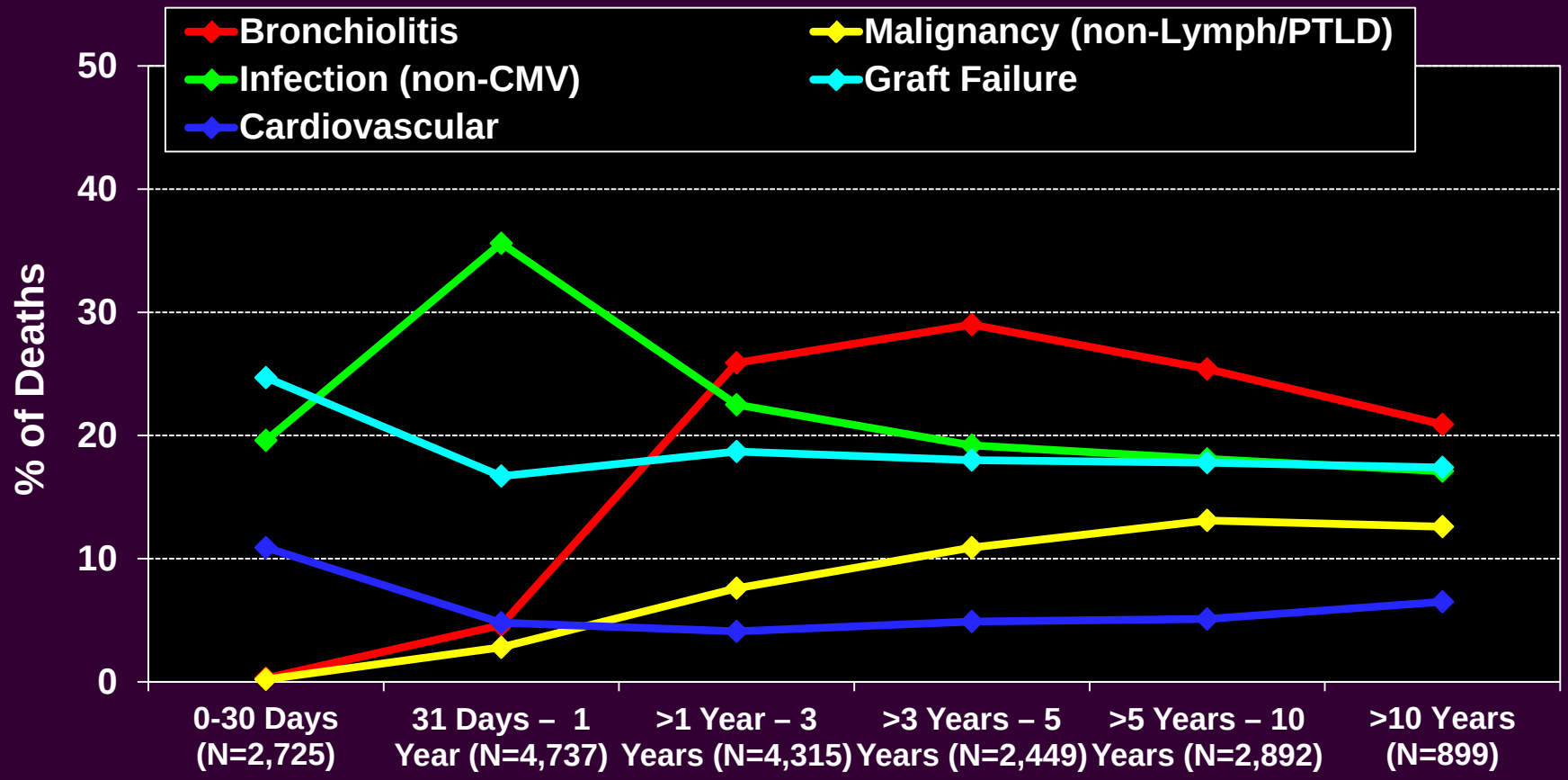
Acute rejection and other causes of death are not shown on the slide

Adult Lung Transplants
Relative Incidence of Leading Causes of Death
(Deaths: January 1992 – June 2012)



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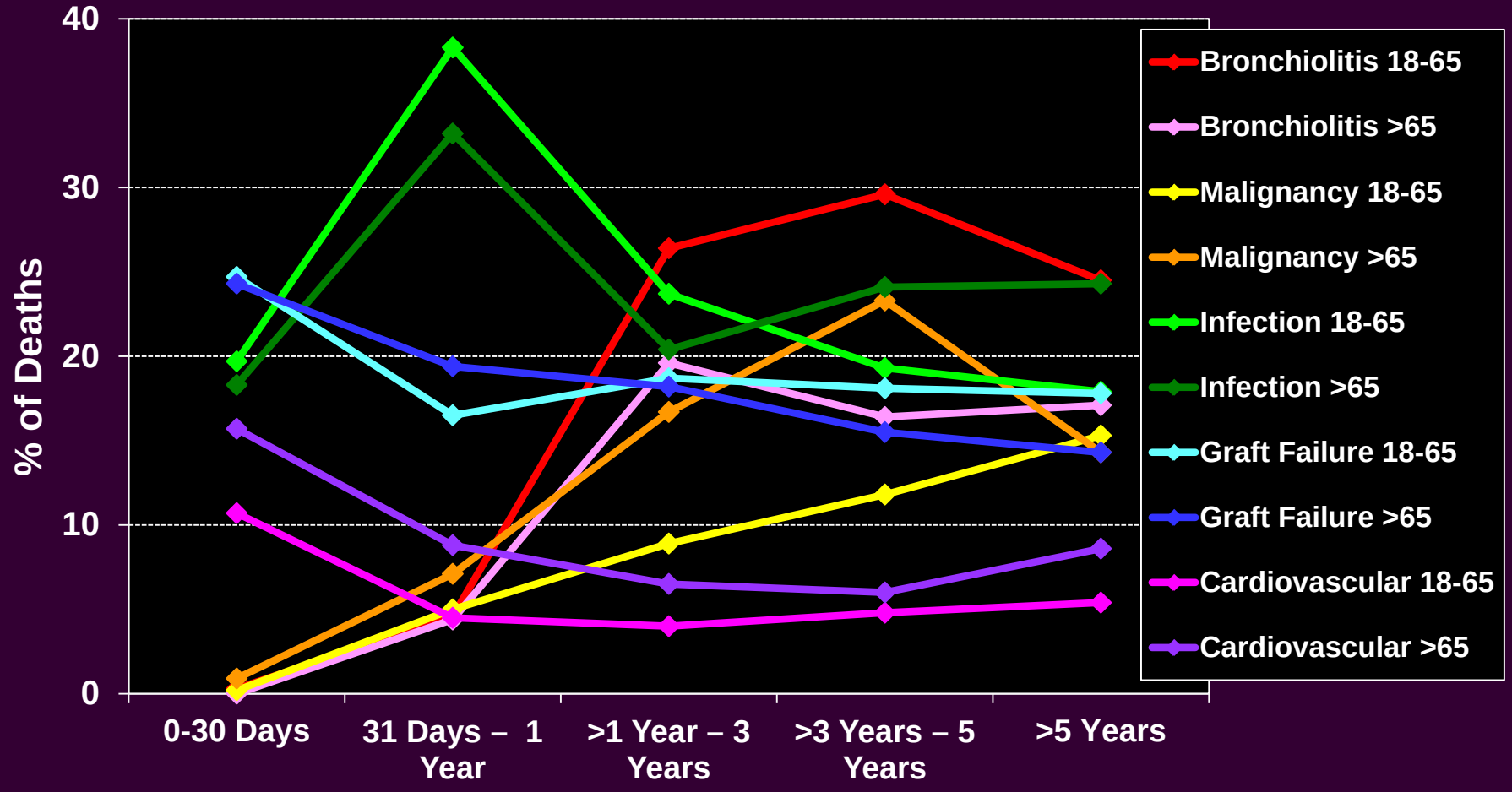
Adult Lung Transplants

Relative Incidence of Leading Causes of Death by Age Group

(Deaths: January 1992 – June 2012)



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Adult Lung Transplants
Cause of Death Stratified by Donor/Recipient CMV Status
(Deaths: January 1992 – June 2012)

Donor/ Recipient CMV Status	CAUSE OF DEATH	0-30 Days	31 Days - 1 Year	>1 Year - 3 Years	>3 Years - 5 Years	>5 Years – 10 Years	>10 Years
D(-)/R(-) (N=1,714)	BRONCHIOLITIS	1 (0.5%)	24 (6.0%)	109 (24.8%)	86 (32.1%)	75 (24.5%)	20 (18.2%)
	INFECTION, NON-CMV	34 (18.1%)	140 (34.8%)	103 (23.4%)	45 (16.8%)	45 (14.7%)	17 (15.5%)
	GRAFT FAILURE	52 (27.7%)	76 (18.9%)	89 (20.2%)	53 (19.8%)	55 (18.0%)	20 (18.2%)
D(-)/R(+) (N=2,573)	BRONCHIOLITIS	3 (1.0%)	32 (5.8%)	163 (27.1%)	106 (25.0%)	151 (28.0%)	38 (23.5%)
	INFECTION, NON-CMV	58 (20.0%)	214 (38.5%)	141 (23.5%)	96 (22.6%)	92 (17.0%)	28 (17.3%)
	GRAFT FAILURE	82 (28.3%)	93 (16.7%)	112 (18.6%)	69 (16.3%)	105 (19.4%)	28 (17.3%)
D(+)/R(-) (N=2,295)	BRONCHIOLITIS	0	22 (3.3%)	135 (22.0%)	76 (24.1%)	92 (25.9%)	11 (11.8%)
	INFECTION, NON-CMV	47 (18.3%)	244 (36.9%)	145 (23.6%)	49 (15.6%)	55 (15.5%)	27 (29.0%)
	GRAFT FAILURE	68 (26.5%)	134 (20.3%)	132 (21.5%)	68 (21.6%)	82 (23.1%)	18 (19.4%)
D(+)/R(+) (N=3,980)	BRONCHIOLITIS	1 (0.2%)	49 (5.2%)	271 (26.2%)	170 (26.9%)	170 (24.3%)	39 (19.4%)
	INFECTION, NON-CMV	81 (17.6%)	339 (35.6%)	226 (21.9%)	126 (19.9%)	128 (18.3%)	27 (13.4%)
	GRAFT FAILURE	141 (30.6%)	205 (21.6%)	198 (19.1%)	125 (19.8%)	138 (19.7%)	40 (19.9%)

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Multivariable Analyses

Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality

DIAGNOSIS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Retransplant	585	1.69	<.0001	1.38 - 2.07
Connective Tissue Disease	297	1.36	0.0226	1.04 - 1.76
Other*	787	1.32	0.0035	1.10 - 1.60
LAM	129	0.47	0.0289	0.24 - 0.93
TRANSPLANT CHARACTERISTICS				
Transplant year = 1999/2000 vs. 2010/2011	1,655	2.23	<.0001	1.92 - 2.60
Transplant year = 2001/2002 vs. 2010/2011	2,030	1.82	<.0001	1.56 - 2.11
Transplant year = 2003/2004 vs. 2010/2011	2,188	1.39	<.0001	1.19 - 1.62
Transplant year = 2005/2006 vs. 2010/2011	2,753	1.37	<.0001	1.19 - 1.57
Transplant year = 2007/2008 vs. 2010/2011	2,903	1.25	0.0010	1.09 - 1.43
Donor CMV +/ Recipient CMV -	3,416	1.17	0.0007	1.07 - 1.28

N = 15,822

Reference group = IPF

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**Other = All diagnoses other than COPD, IPAH, IPF, cystic fibrosis, pulmonary fibrosis, Bronchiectasis, alpha-1 antitrypsin deficiency, retransplant , LAM and* Connective Tissue Disease.

Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality

DONOR CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Donor history of diabetes	764	1.43	<.0001	1.21 - 1.68
RECIPIENT CHARACTERISTICS				
Recipient on dialysis	79	1.92	0.0004	1.34 - 2.75
Hospitalized (including ICU)	1,984	1.70	<.0001	1.51 - 1.91
Ventilator	737	1.53	<.0001	1.30 - 1.79
Prior transfusion	802	1.18	0.037	1.01 - 1.38

N = 15,822

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Adult Lung Transplants (January 1999 – June 2011)
Borderline Significant Risk Factors For 1 Year Mortality

RECIPIENT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Pulmonary embolism	135	1.32	0.0928	0.95 - 1.83
Diagnosis = IPAH	375	1.31	0.0571	0.99 - 1.72
Diagnosis = Sarcoidosis, double lung	365	1.27	0.0673	0.98 - 1.64
Diagnosis = Alpha-1 antitrypsin deficiency	708	1.25	0.0750	0.98 - 1.59
Chronic steroid use	7,562	1.07	0.0765	0.99 - 1.16
Diagnosis = COPD, single lung	2,867	0.85	0.0921	0.71 - 1.03

N = 15,822

Reference group = IPF

Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality

Continuous Factors (see figures)

Recipient age	Cardiac output
Transplant center volume	Height difference
Bilirubin	Recipient FVC % predicted
Recipient oxygen required at rest	PCO_2

Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient Age

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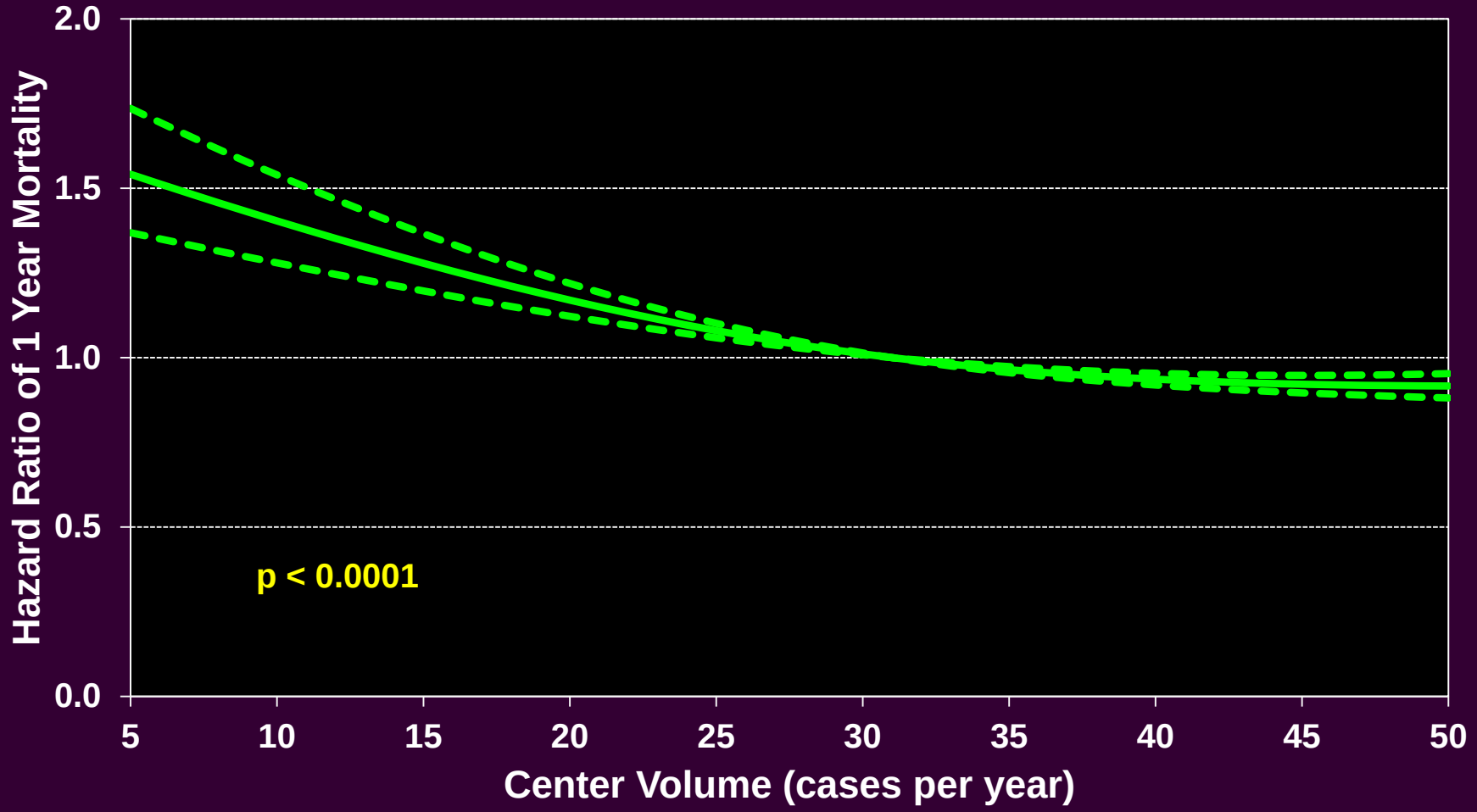
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Center Volume



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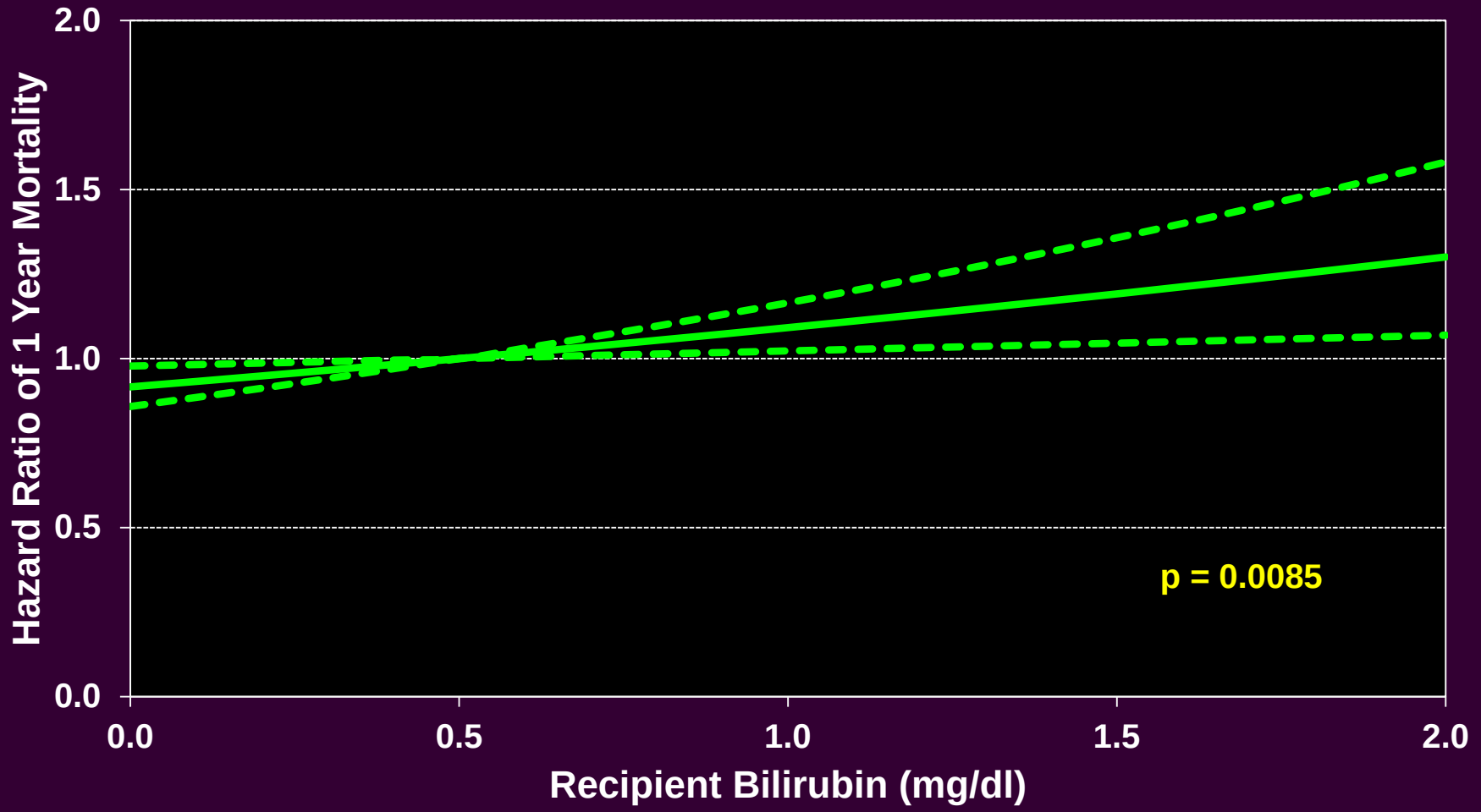
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient Pre-Transplant Bilirubin



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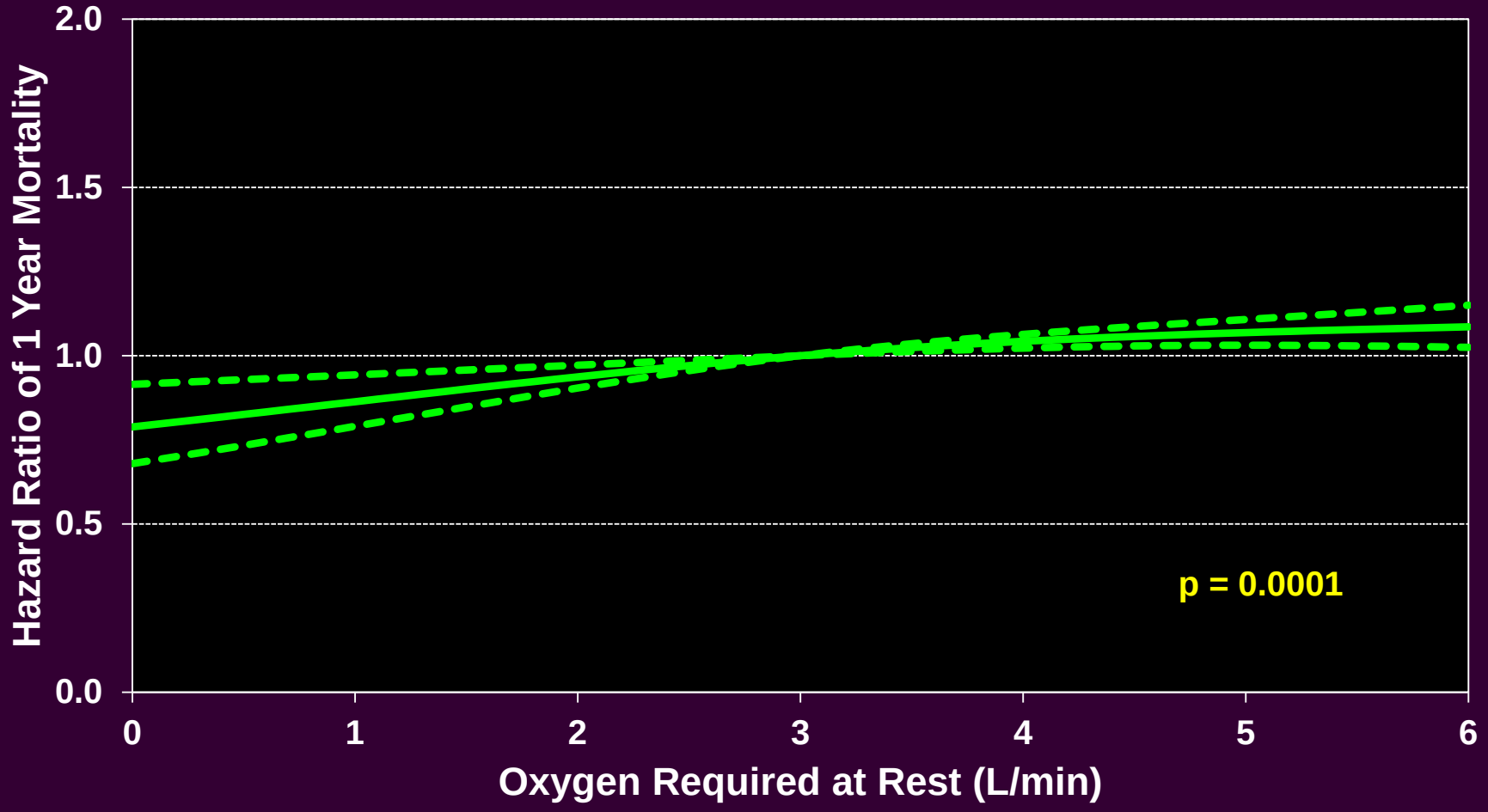
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient Oxygen Required at Rest



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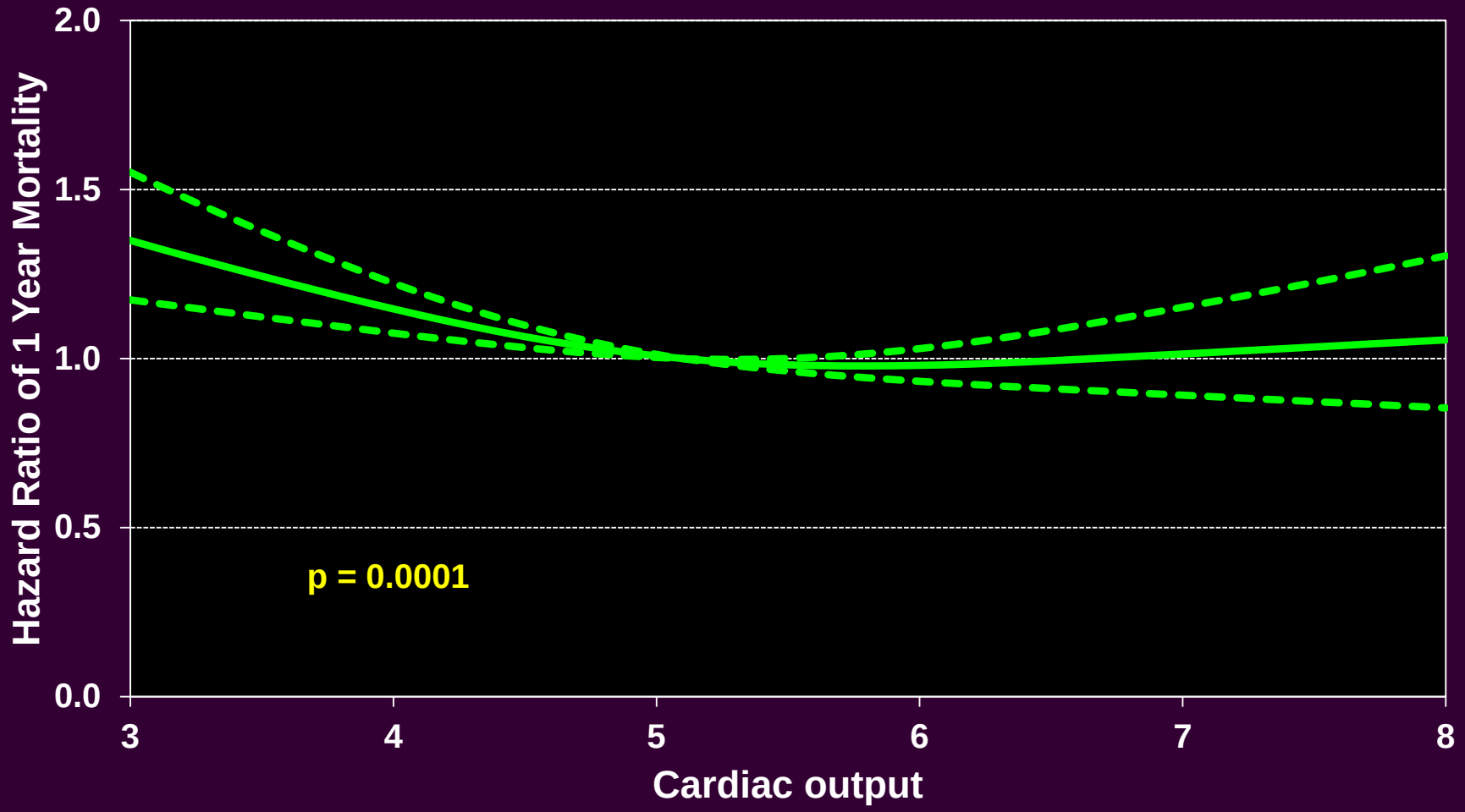
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient Pre-Transplant Cardiac Output



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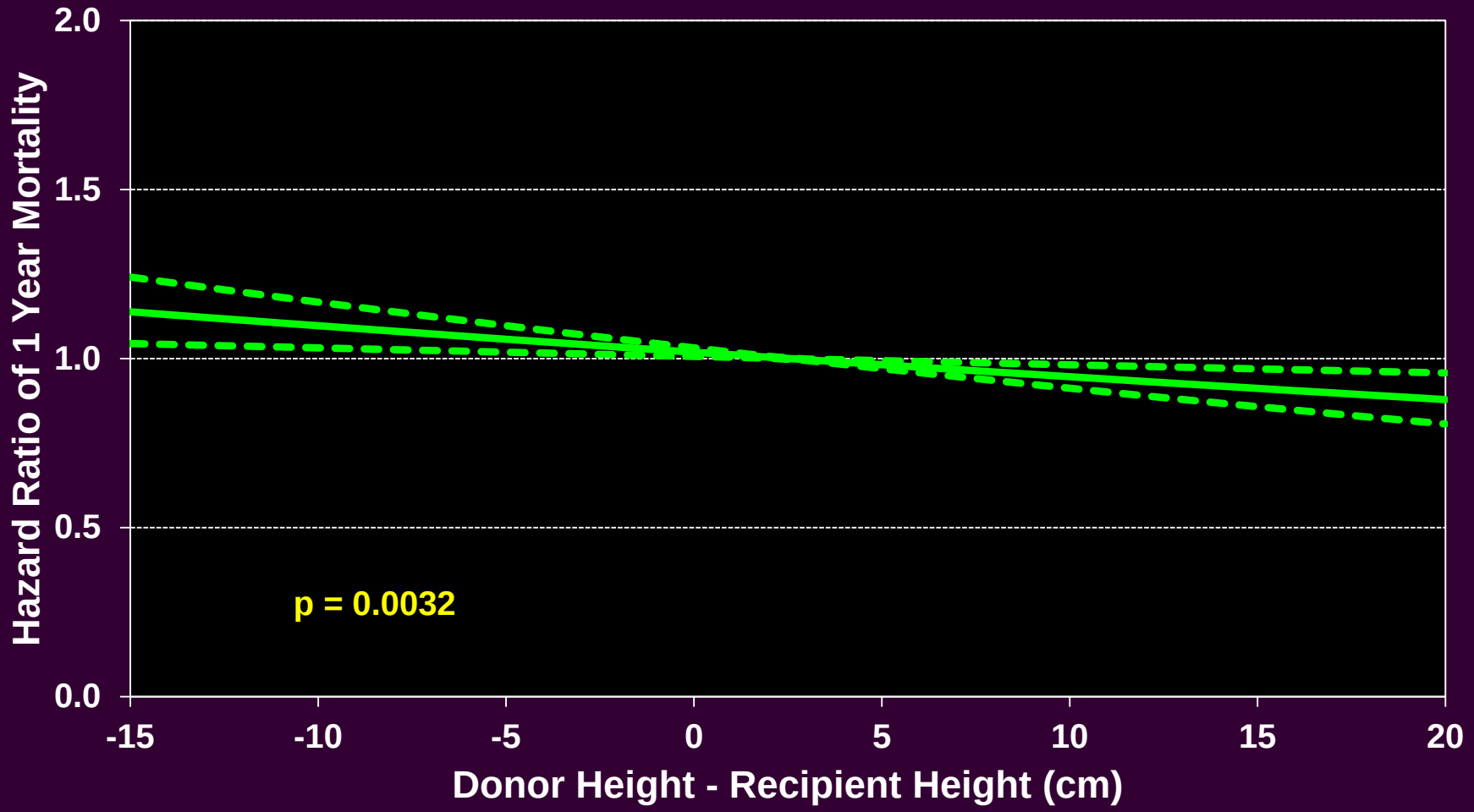
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Height Difference



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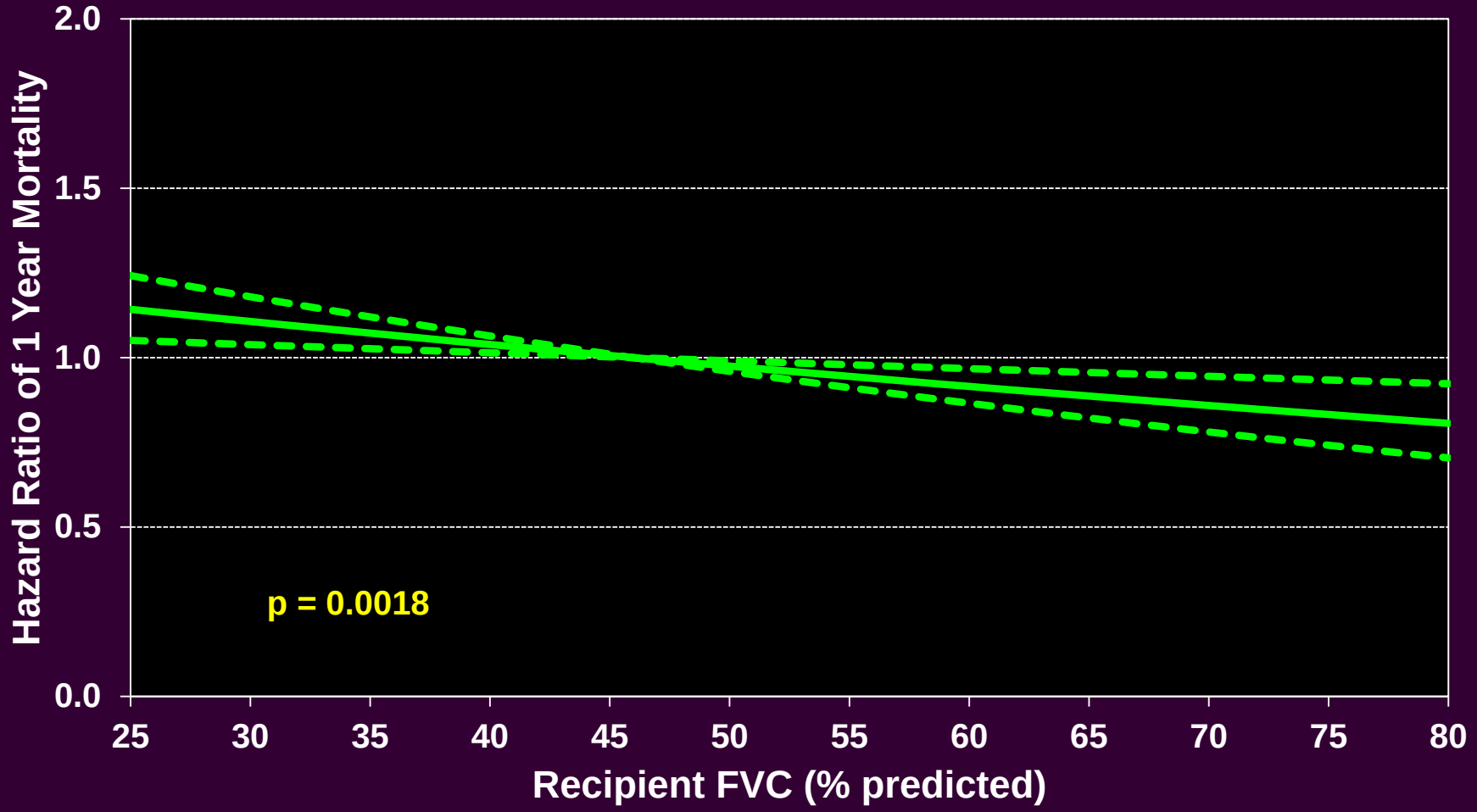
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient FVC (% predicted)



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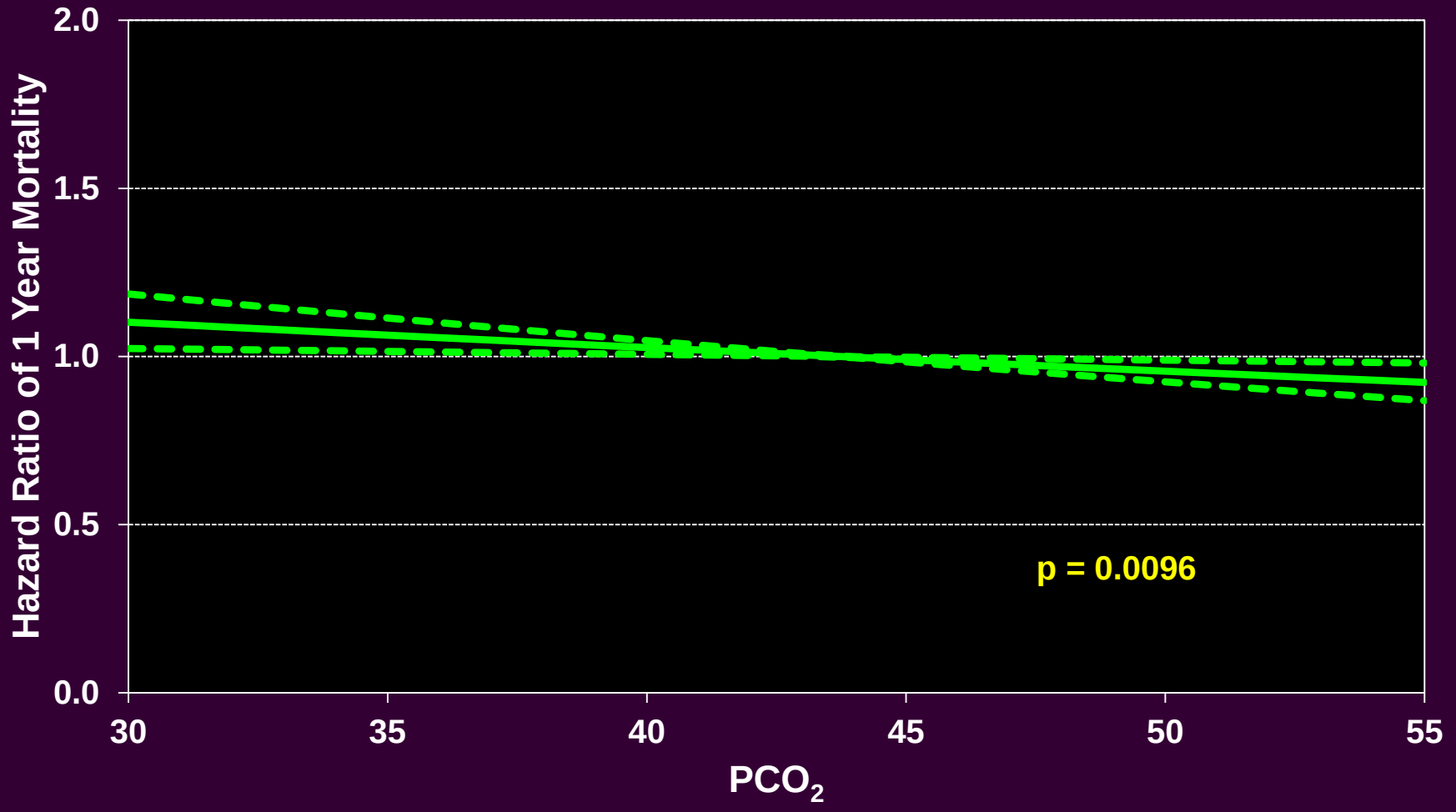
Adult Lung Transplants (January 1999 – June 2011)
Risk Factors For 1 Year Mortality with 95% Confidence Limits
Recipient PCO_2



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Adult Lung Transplants (January 1999 – June 2011)
Diagnosis = COPD/Emphysema
Risk Factors For 1 Year Mortality

RECIPIENT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Hospitalized (including ICU)	281	2.22	<.0001	1.74 - 2.85
Chronic steroid use	2,290	1.26	0.0018	1.09 - 1.45
Female recipient	2,642	0.72	0.0004	0.60 - 0.86
TRANSPLANT CHARACTERISTICS				
Transplant Year: 1990/2000 vs. 2010/2011	752	1.68	0.0006	1.25 - 2.25
Transplant Year: 2001/2002 vs. 2010/2011	874	1.37	0.0372	1.02 - 1.83

N = 5,230

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Adult Lung Transplants (January 1999 – June 2011)
Diagnosis = COPD/Emphysema
Risk Factors For 1 Year Mortality

DONOR CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Donor history of diabetes	249	1.49	0.0063	1.12 - 1.99
Donor history of cancer	87	0.40	0.0248	0.18 - 0.89
BORDERLINE SIGNIFICANT				
Ventilator	106	1.46	0.0645	0.98 - 2.19
Transplant Year: 2007/2008 vs. 2010/2011	814	1.29	0.0718	0.98 - 1.70

N = 5,230

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Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality

Continuous Factors (see figures)

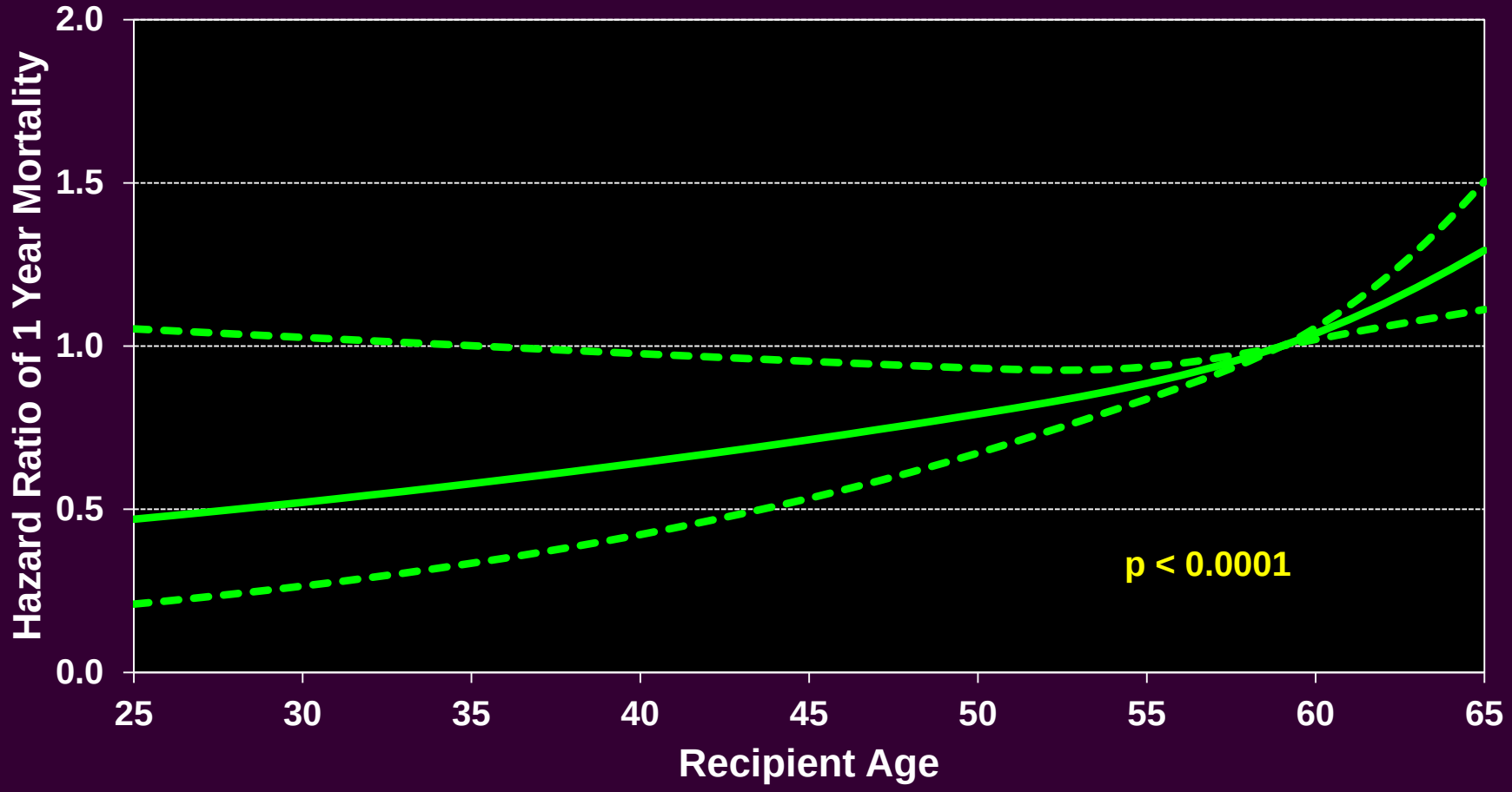
Recipient age	Cardiac output
Transplant center volume	PCO_2
Recipient oxygen required at rest	Donor height

Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Age



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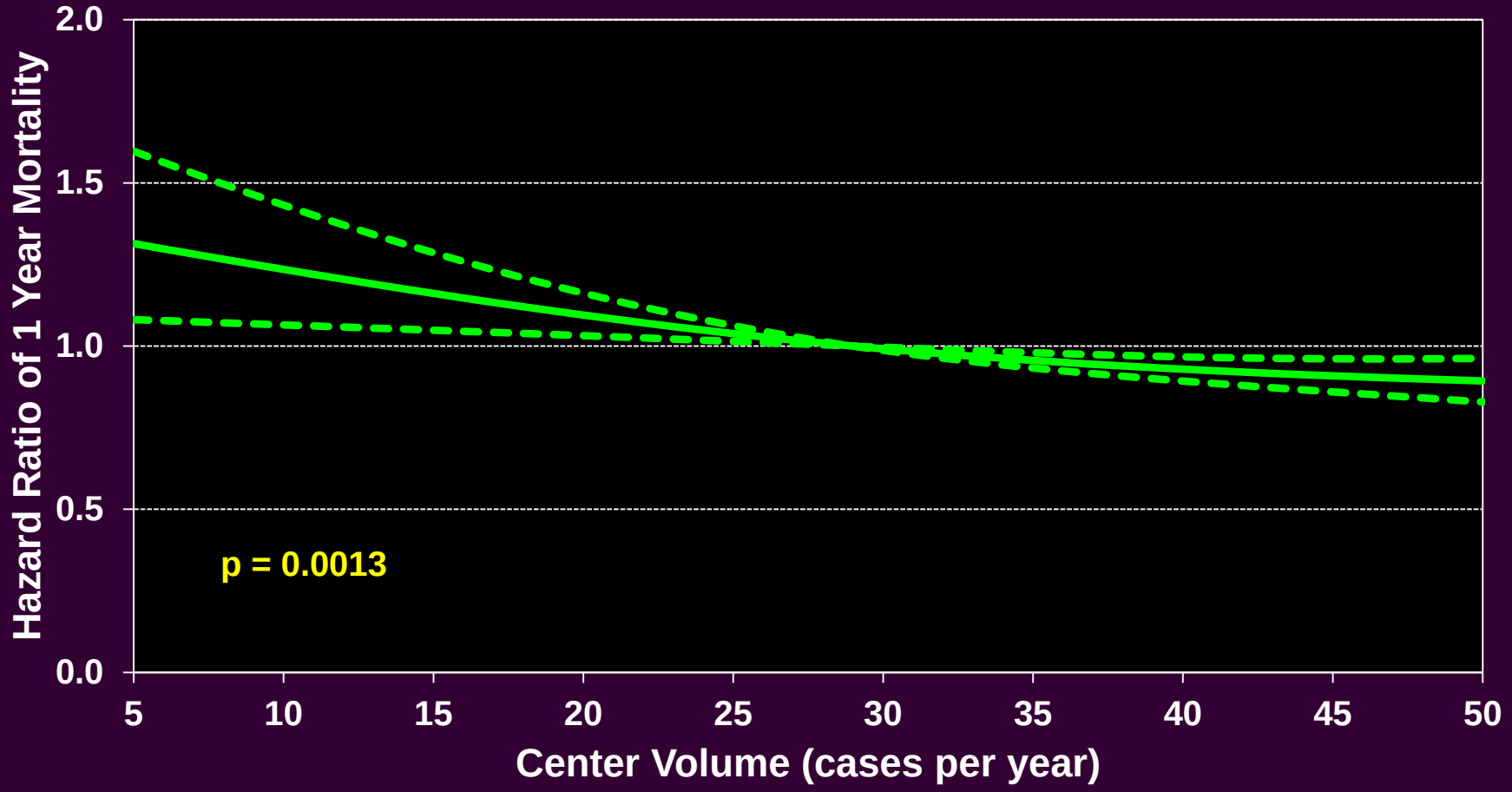
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Center Volume



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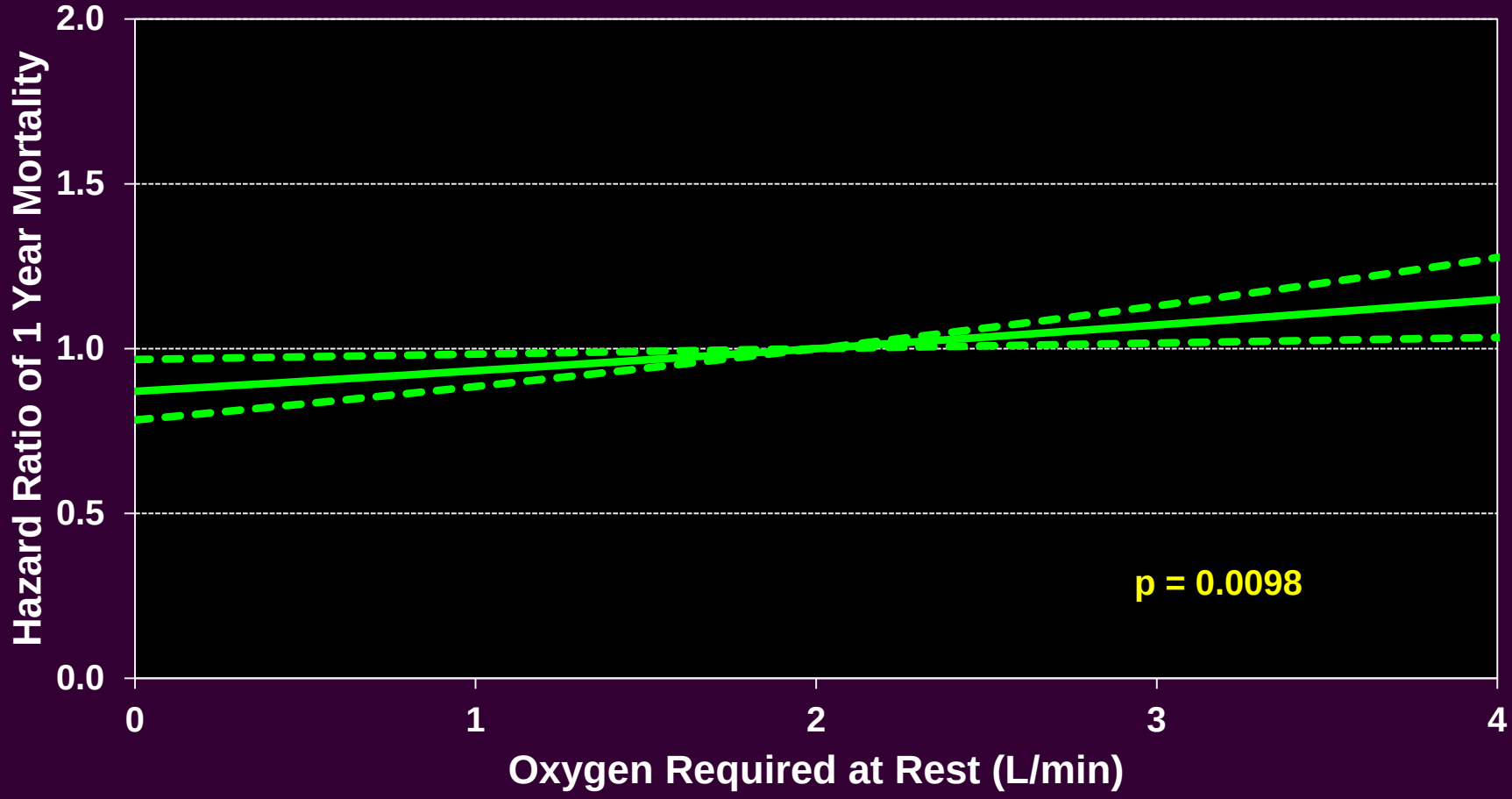
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Oxygen Required at Rest



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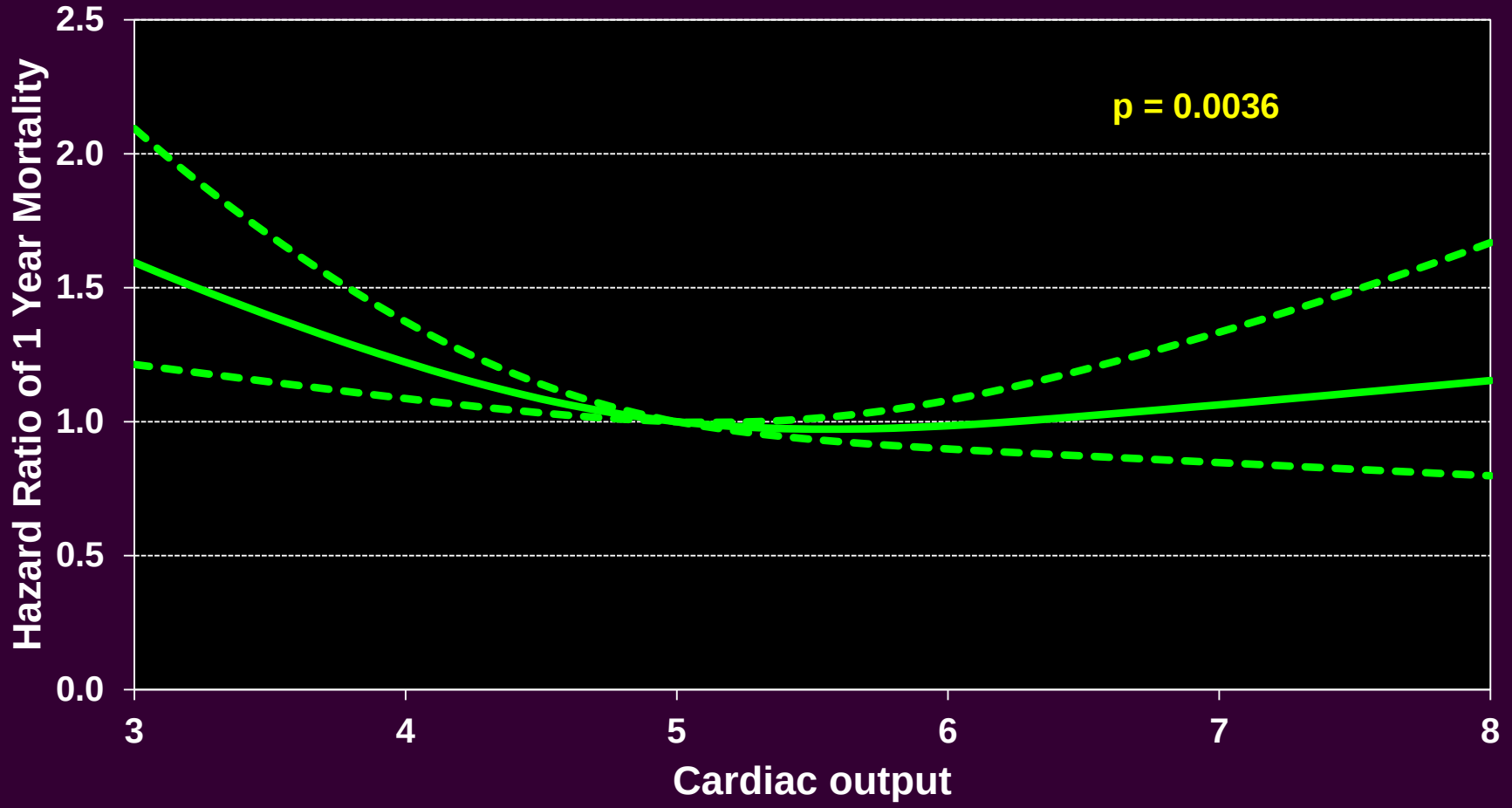
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Pre-Transplant Cardiac Output



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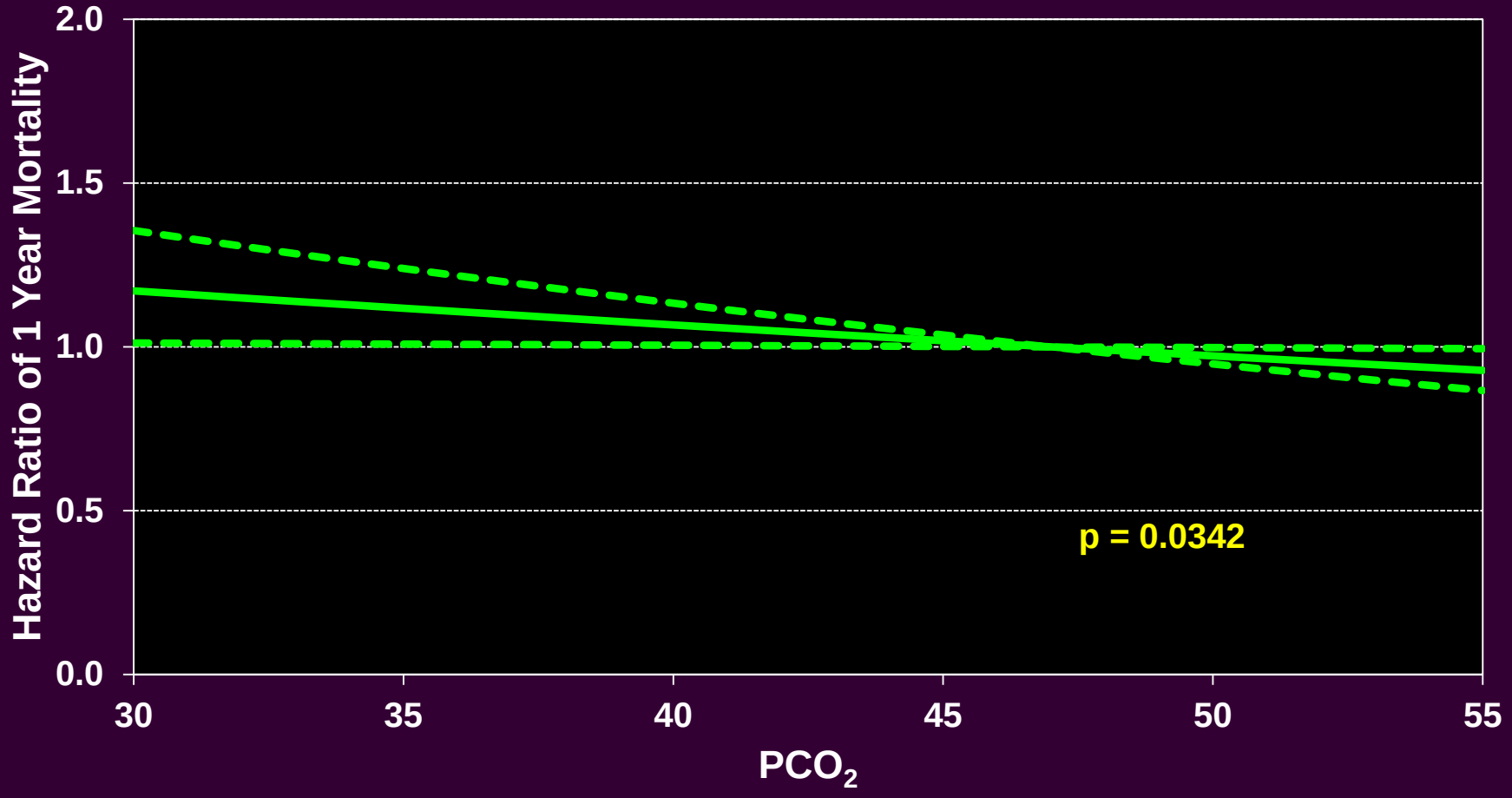
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient PCO_2



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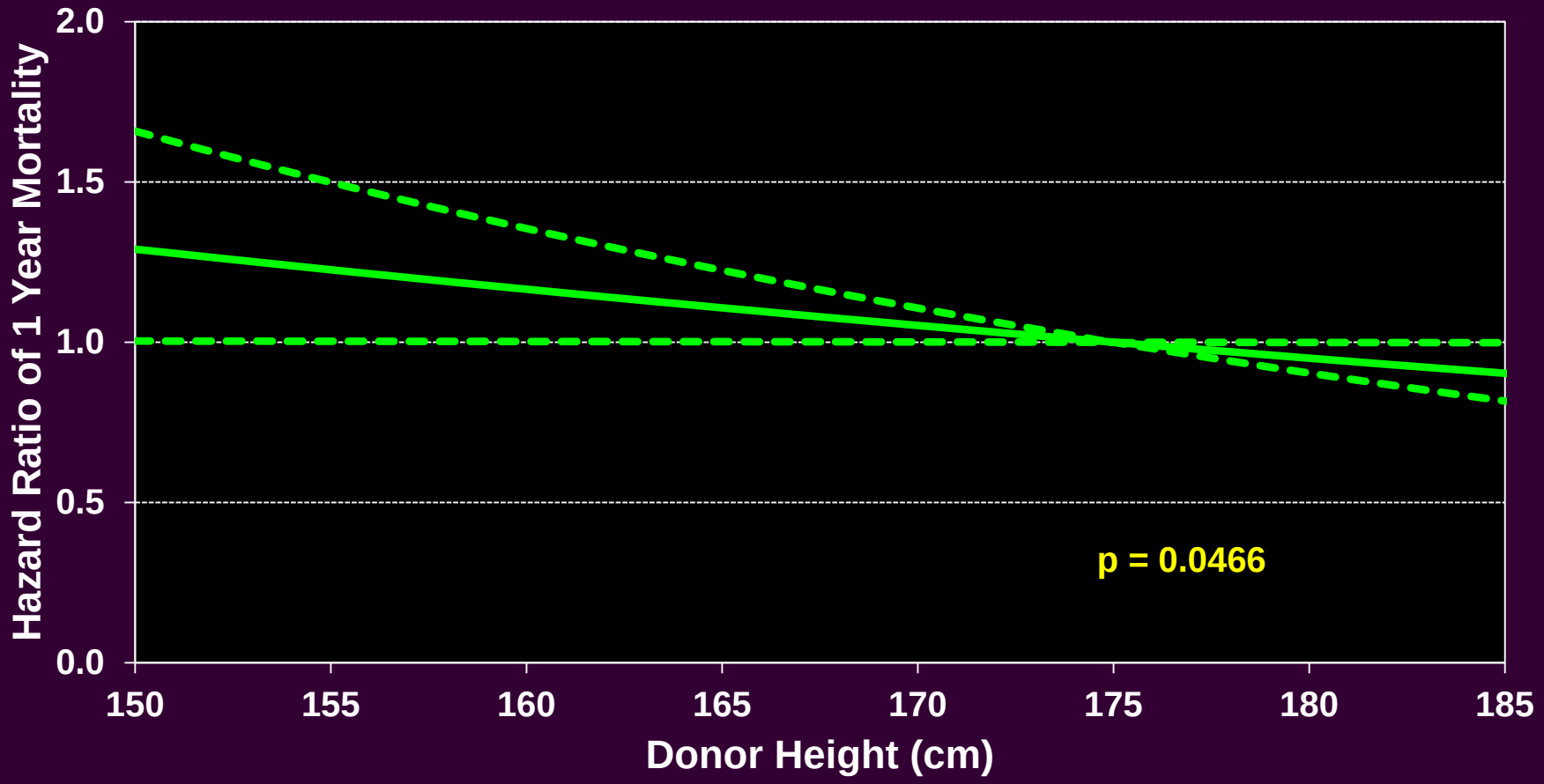
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = COPD/Emphysema

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Donor Height



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Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality

TRANSPLANT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Transplant Year: 1999/2000 vs. 2010/2011	277	2.98	<.0001	2.24 - 3.97
Transplant Year: 2001/2002 vs. 2010/2011	366	1.99	<.0001	1.49 - 2.65
Transplant Year: 2003/2004 vs. 2010/2011	508	1.70	<.0001	1.31 - 2.22
Transplant Year: 2005/2006 vs. 2010/2011	809	1.46	0.0013	1.16 - 1.84
Donor CMV +/ Recipient CMV -	952	1.37	<.0001	1.17 - 1.60

N = 4,463

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Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality

RECIPIENT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Hospitalized (including ICU)	604	1.80	<.0001	1.46 - 2.21
Ventilator	223	1.61	0.0012	1.21 - 2.14
Prior transfusion	147	1.46	0.0179	1.07 - 1.99
BORDERLINE CHARACTERISTICS				
Donor history of diabetes	227	1.29	0.0748	0.97 - 1.71
Transplant Year: 2007/2008 vs. 2010/2011	972	1.24	0.0525	1.00 - 1.54

N = 4,463

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Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality

Continuous Factors (see figures)

- Recipient age
- Transplant center volume
- Recipient oxygen required at rest
- Bilirubin
- PCO_2
- FVC % predicted
- Donor height
- Creatinine (borderline)
- PA Systolic Pressure (borderline)

Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Age

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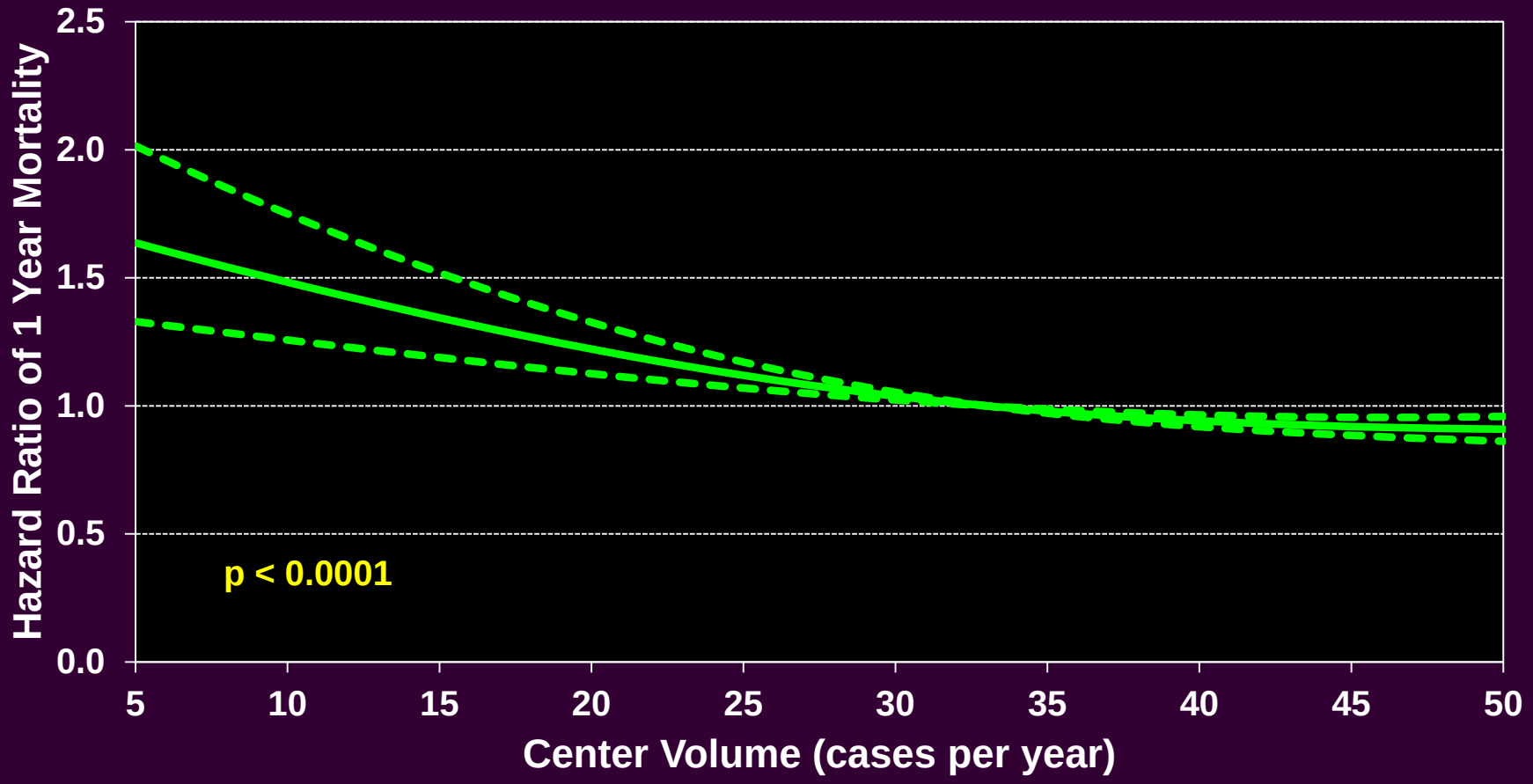
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Center Volume



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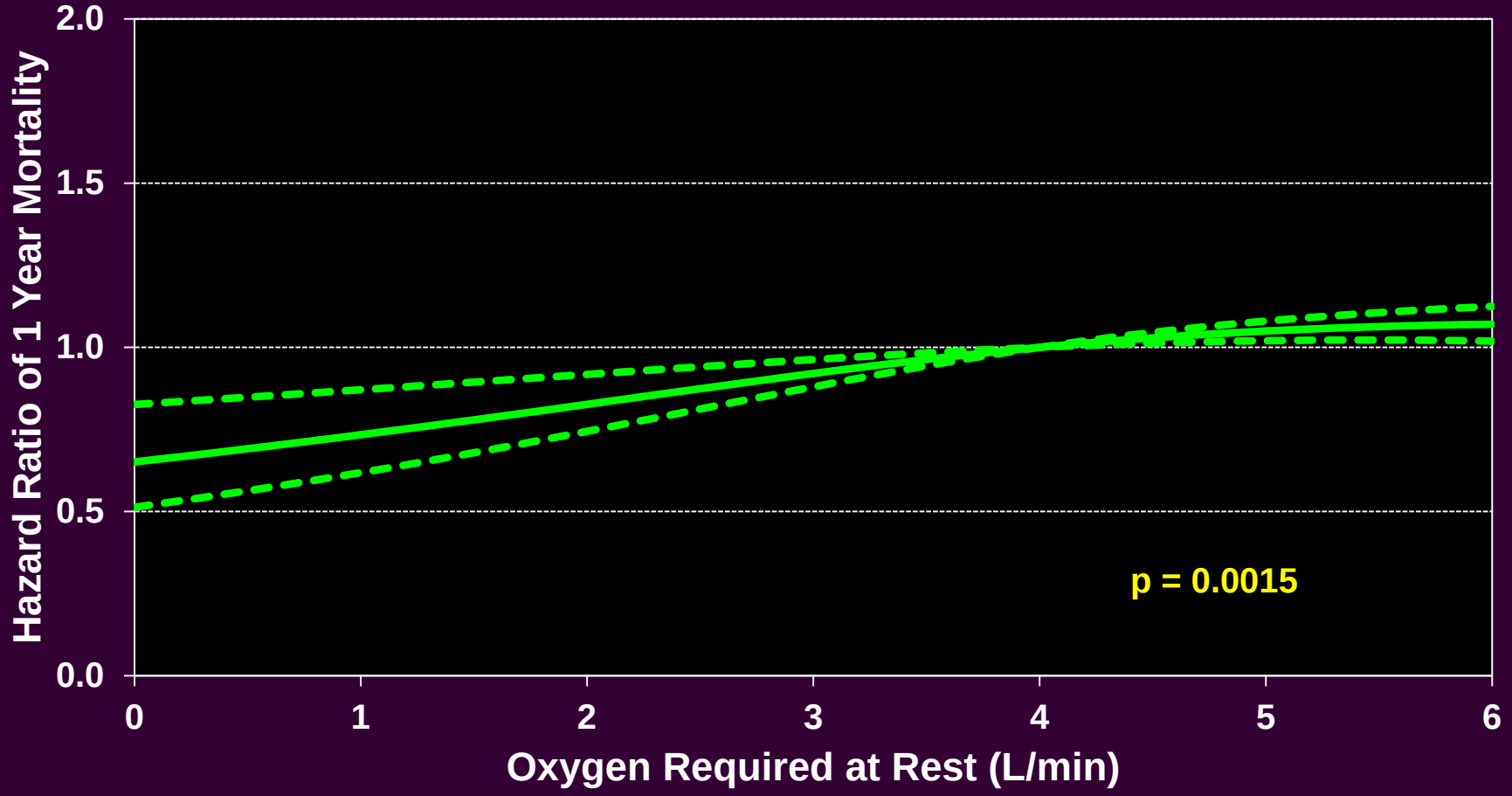
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Oxygen Required at Rest



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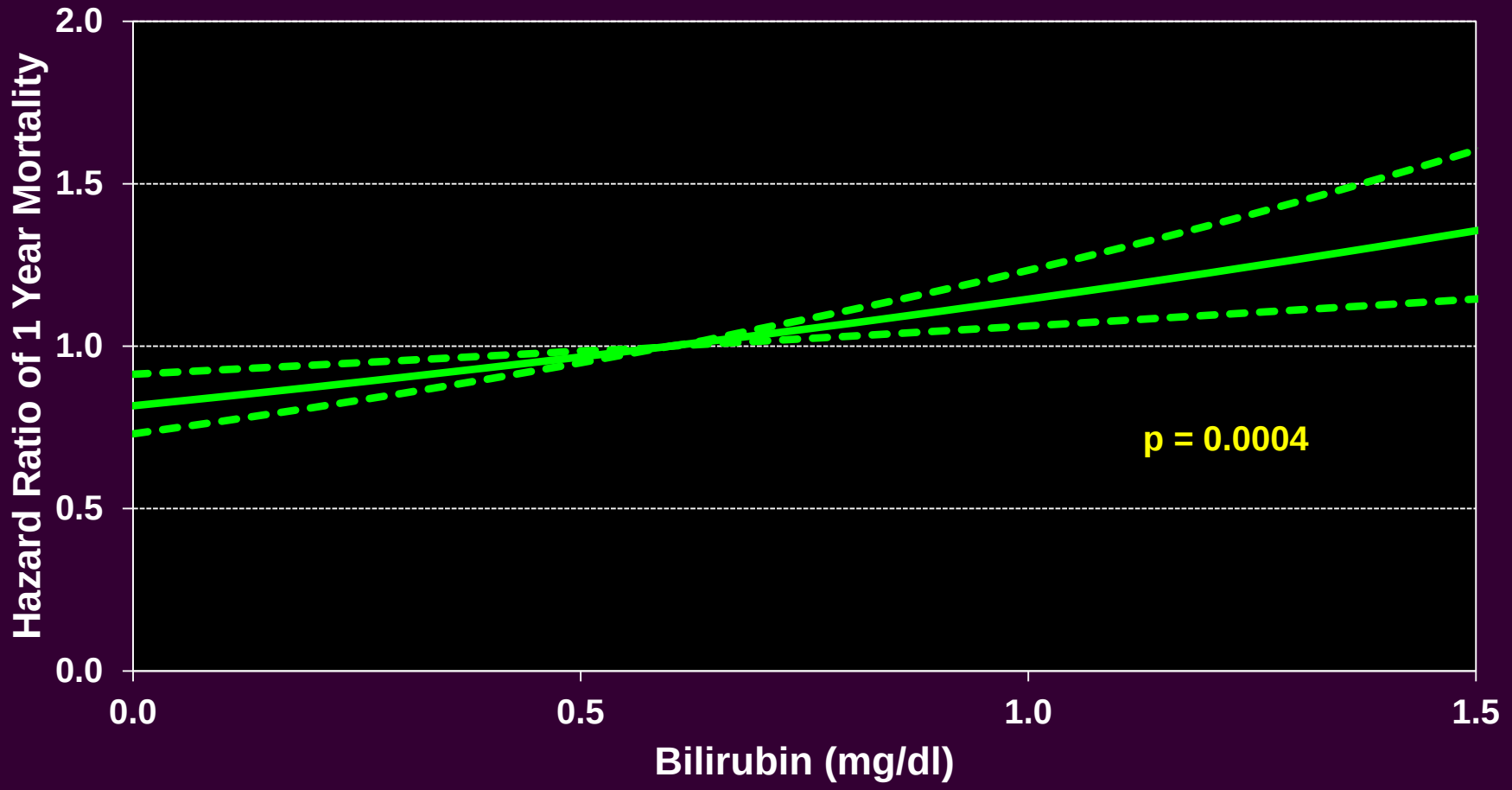
Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Bilirubin



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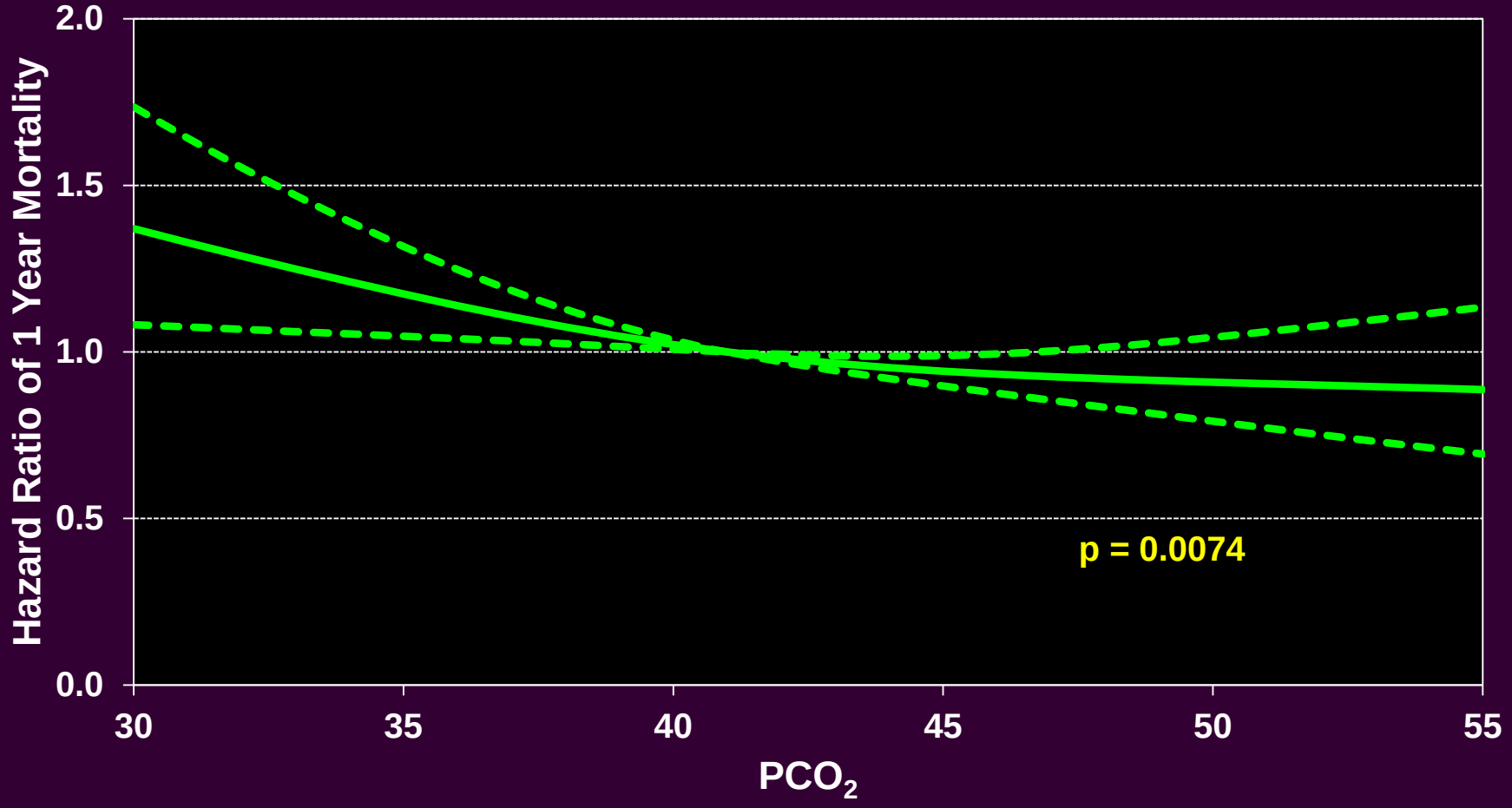
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient PCO_2



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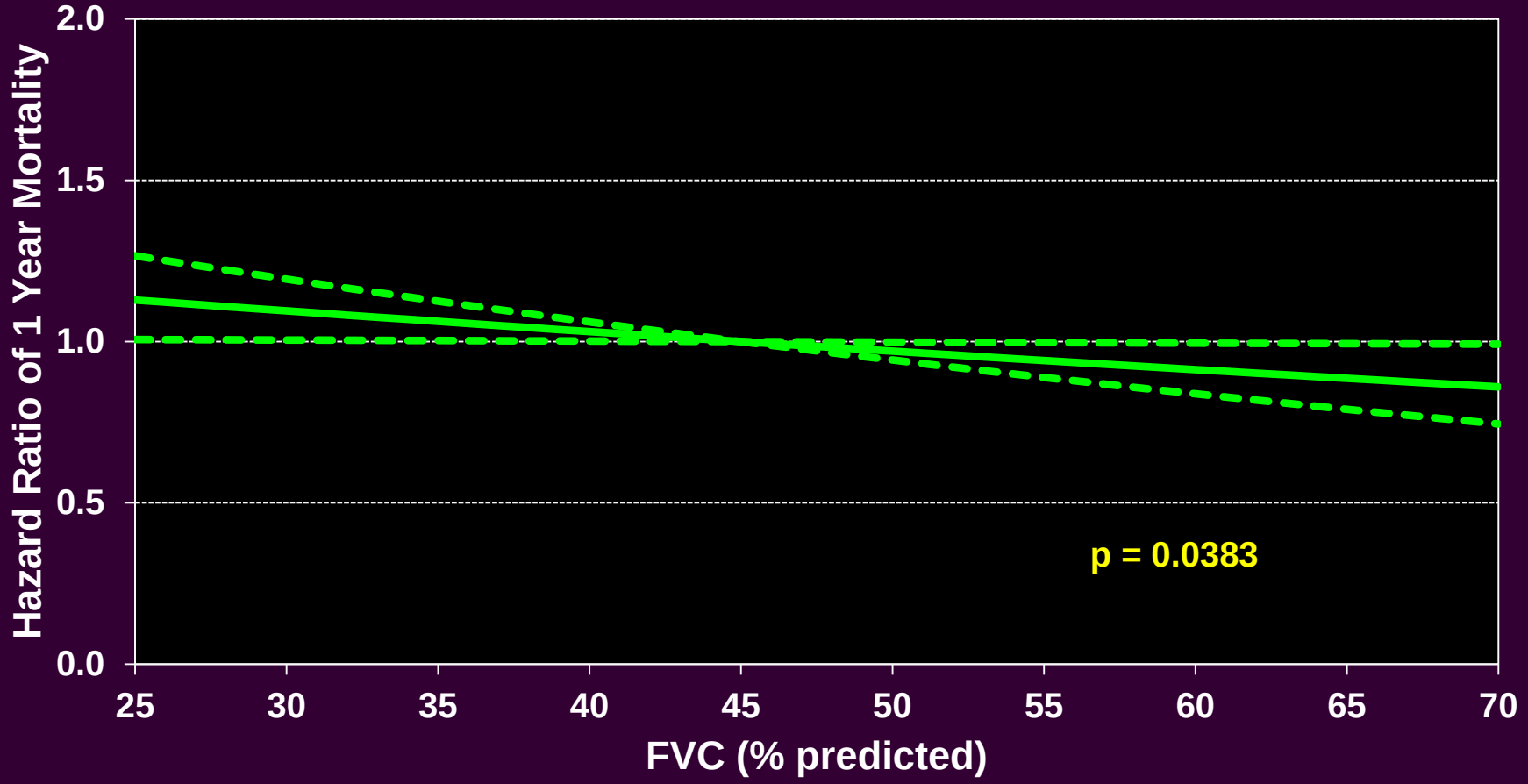
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient FVC (% predicted)



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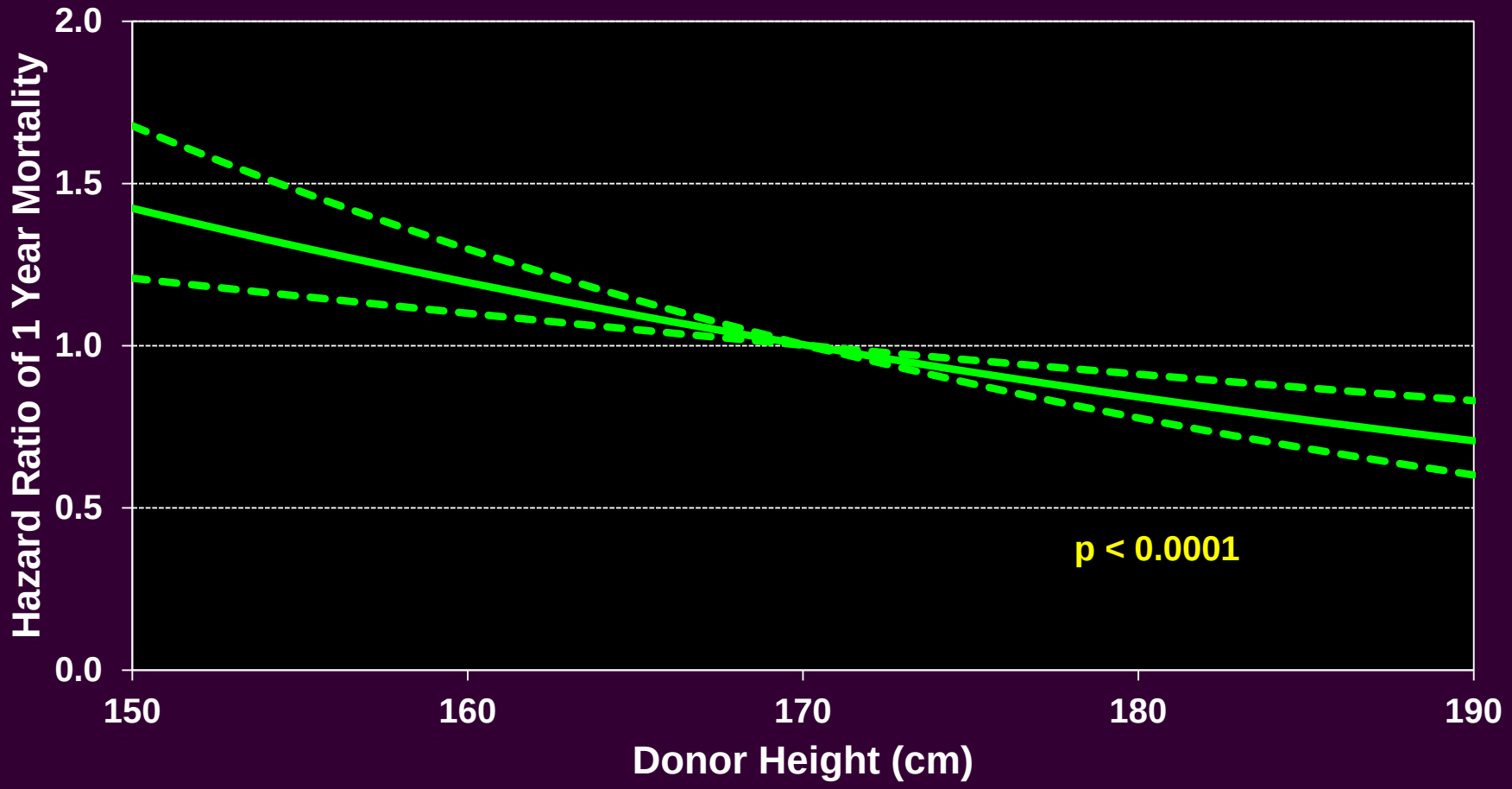
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Donor Height



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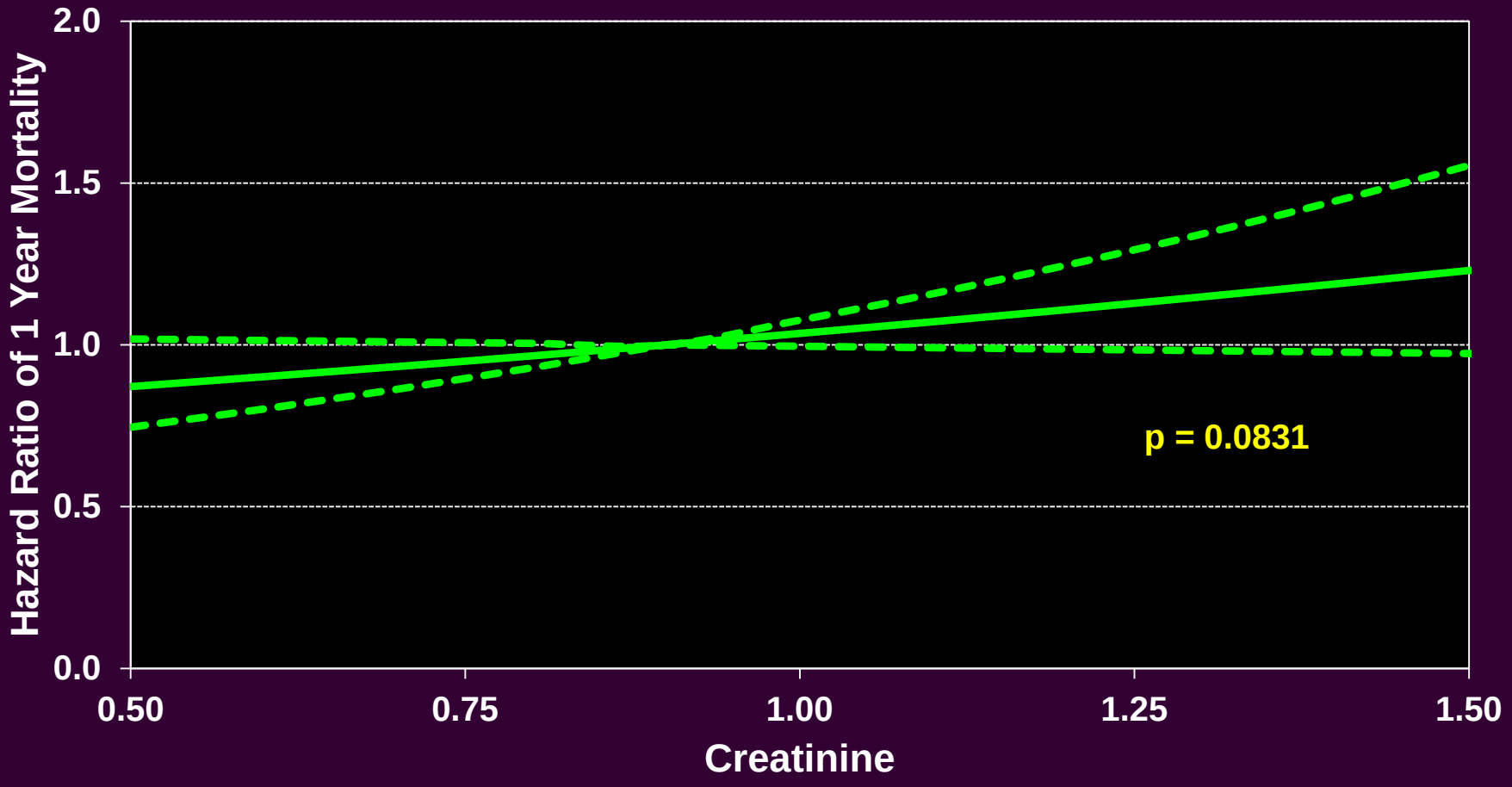
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient Creatinine at Transplant



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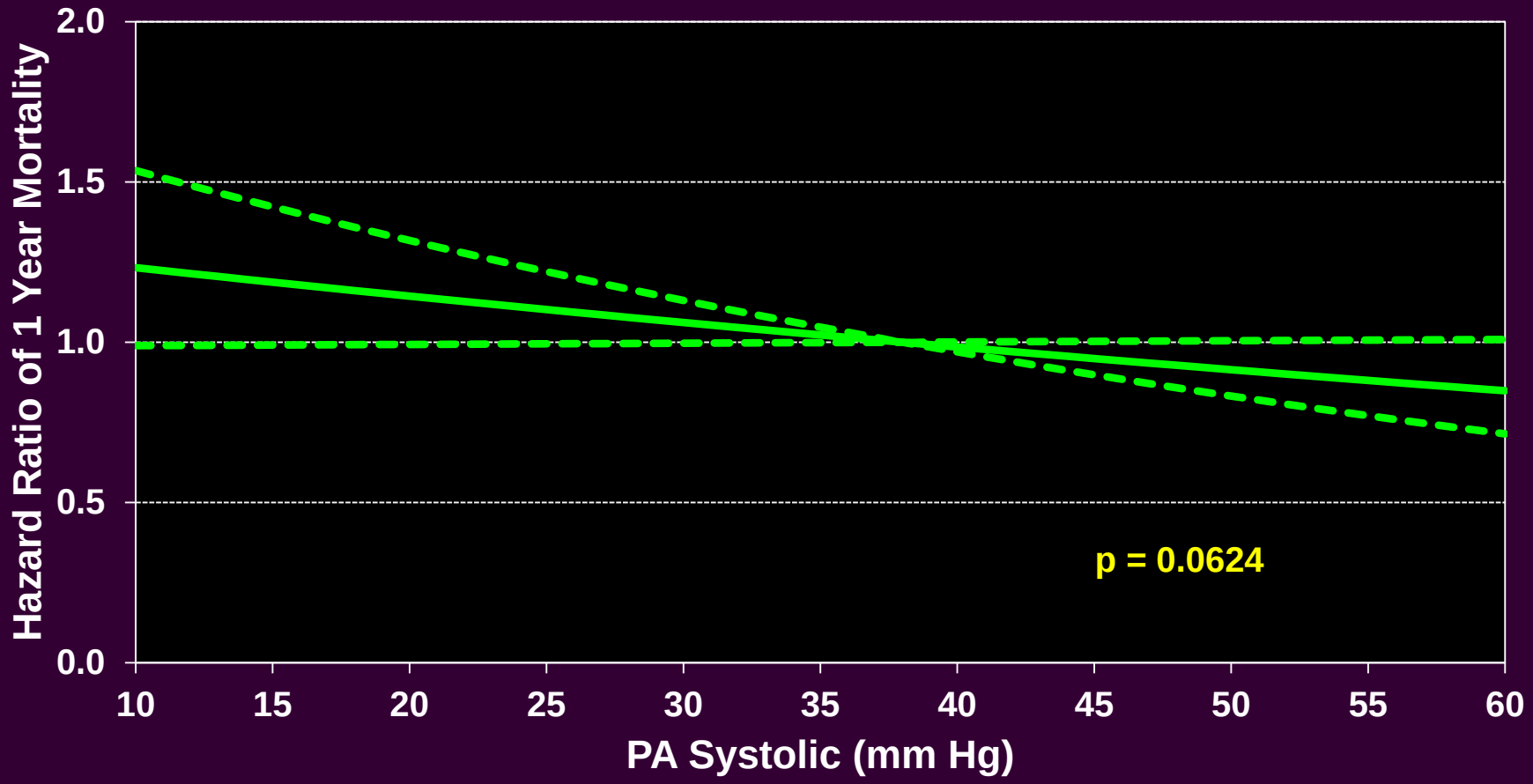
Adult Lung Transplants (January 1999 – June 2011)

Diagnosis = IPF

Risk Factors For 1 Year Mortality with 95% Confidence Limits

Recipient PA Systolic Pressure



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Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality

*DIAGNOSIS**	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Retransplant	291	1.27	0.0108	1.06 - 1.53
IPF, single lung	1,339	1.13	0.0278	1.01 - 1.25
Cystic Fibrosis	1,275	0.79	0.0087	0.66 - 0.94
LAM	81	0.53	0.0049	0.34 - 0.83
TRANSPLANT CHARACTERISTICS				
Transplant Year: 1999/2000 vs. 2005-2007	1,655	1.26	<.0001	1.15 - 1.38
Transplant Year: 2001/2002 vs. 2005-2007	2,030	1.10	0.0308	1.01 - 1.20
Donor CMV +/ Recipient CMV -	1,850	1.13	0.0013	1.05 - 1.22

N = 9,343

*** Reference group = COPD/Emphysema, Single lung**

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Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality

DONOR CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Donor history of diabetes	335	1.29	0.0013	1.10 - 1.50
RECIPIENT CHARACTERISTICS				
Recipient on dialysis	39	1.86	0.0018	1.26 - 2.75
Hospitalized (including ICU)	890	1.47	<.0001	1.33 - 1.62
Pulmonary embolism	84	1.42	0.0167	1.07 - 1.89
Prior sternotomy	274	1.22	0.0192	1.03 - 1.44
Recipient history of diabetes	1,106	1.14	0.0082	1.03 - 1.26
Chronic steroid use	4,473	1.10	0.0048	1.03 - 1.17
BORDERLINE SIGNIFICANT				
Diagnosis = Connective Tissue Disease	138	1.27	0.059	0.99 - 1.62

N = 9,343

Reference group = COPD/Emphysema, Single lung

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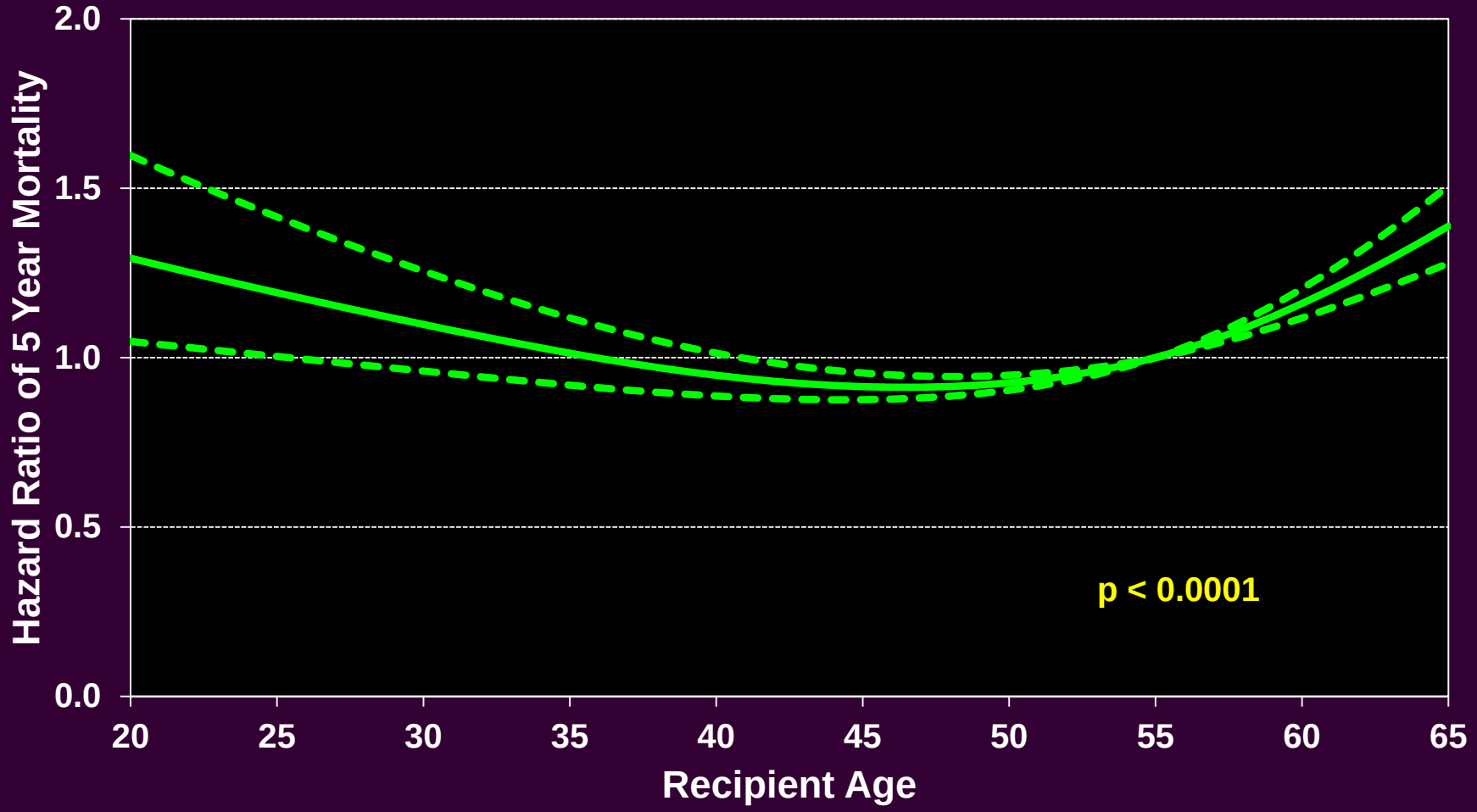
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality

Continuous Factors (see figures)

Recipient age	Cardiac output
Transplant center volume	PCO_2
Recipient oxygen required at rest	Recipient FVC % predicted

Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Recipient Age



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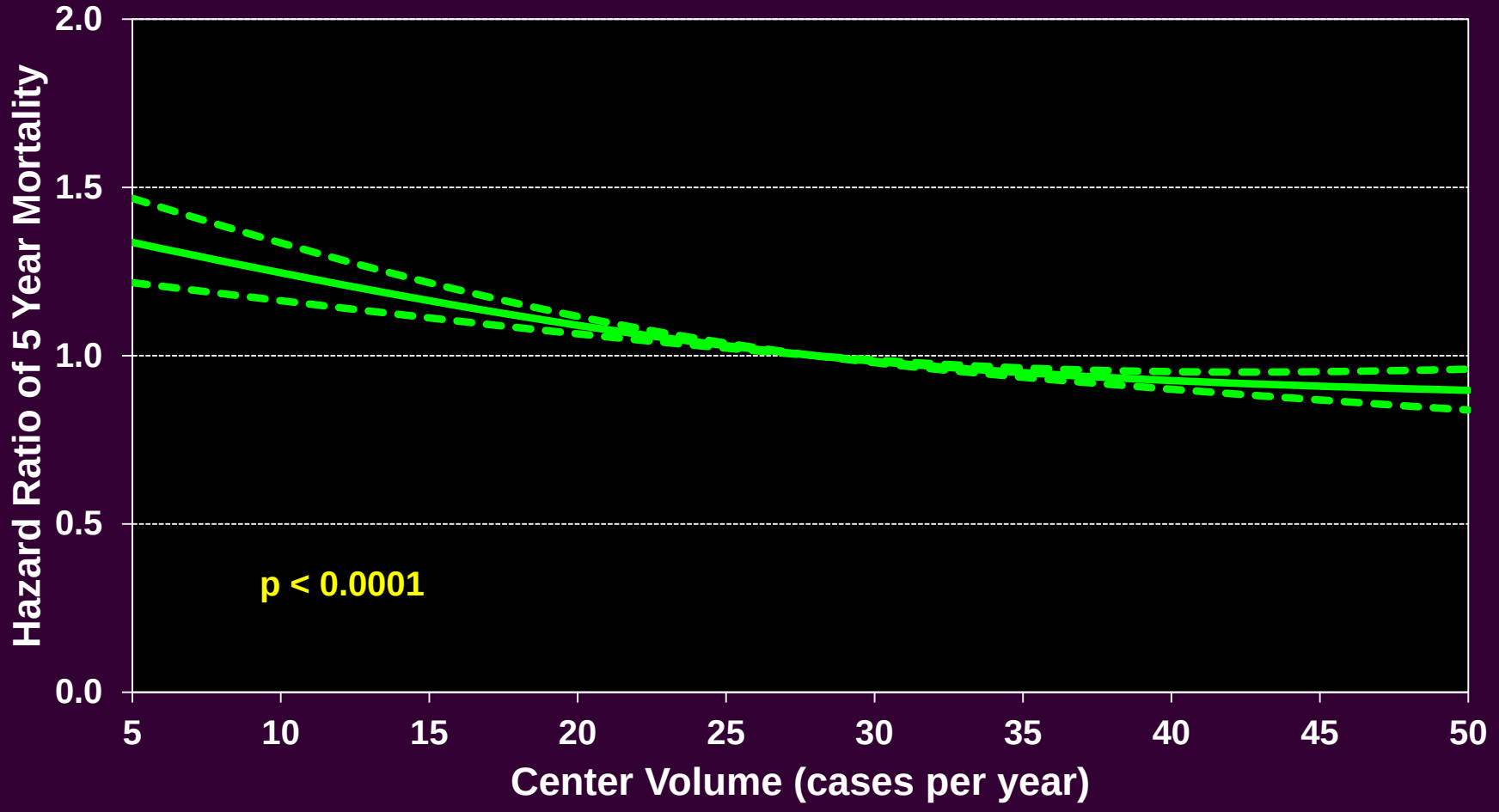
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Center Volume



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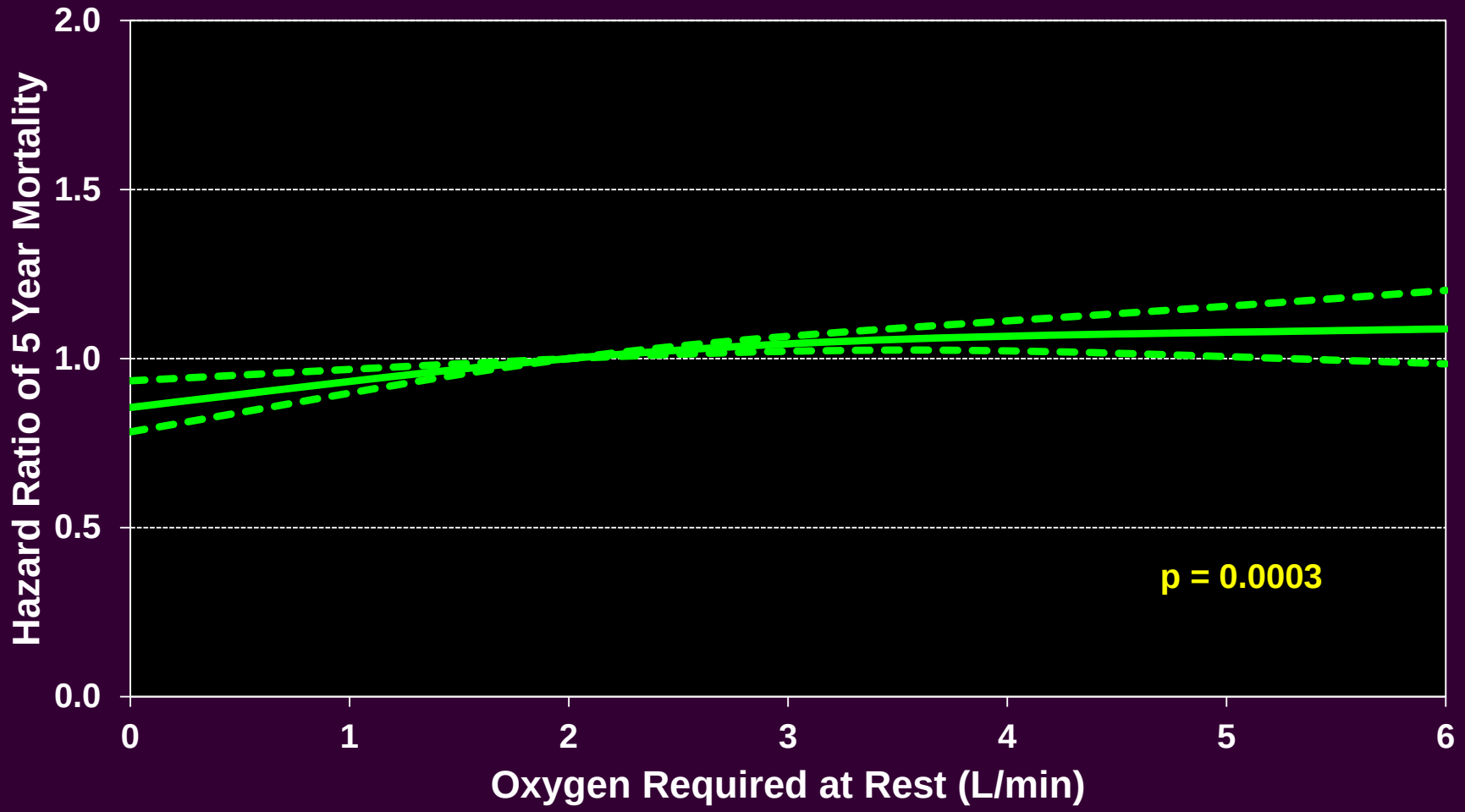
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Recipient Oxygen Required at Rest



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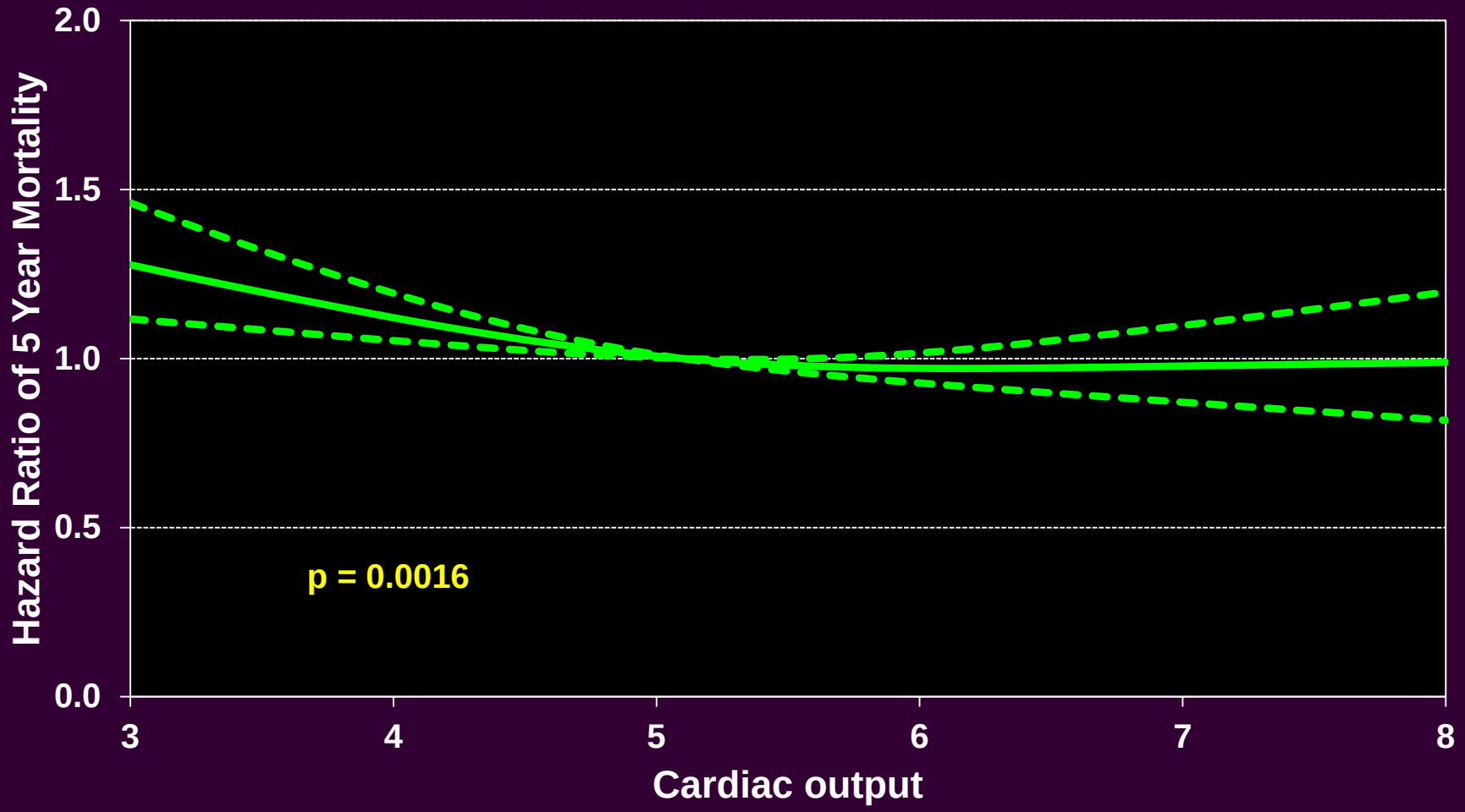
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Recipient Pre-Transplant Cardiac Output



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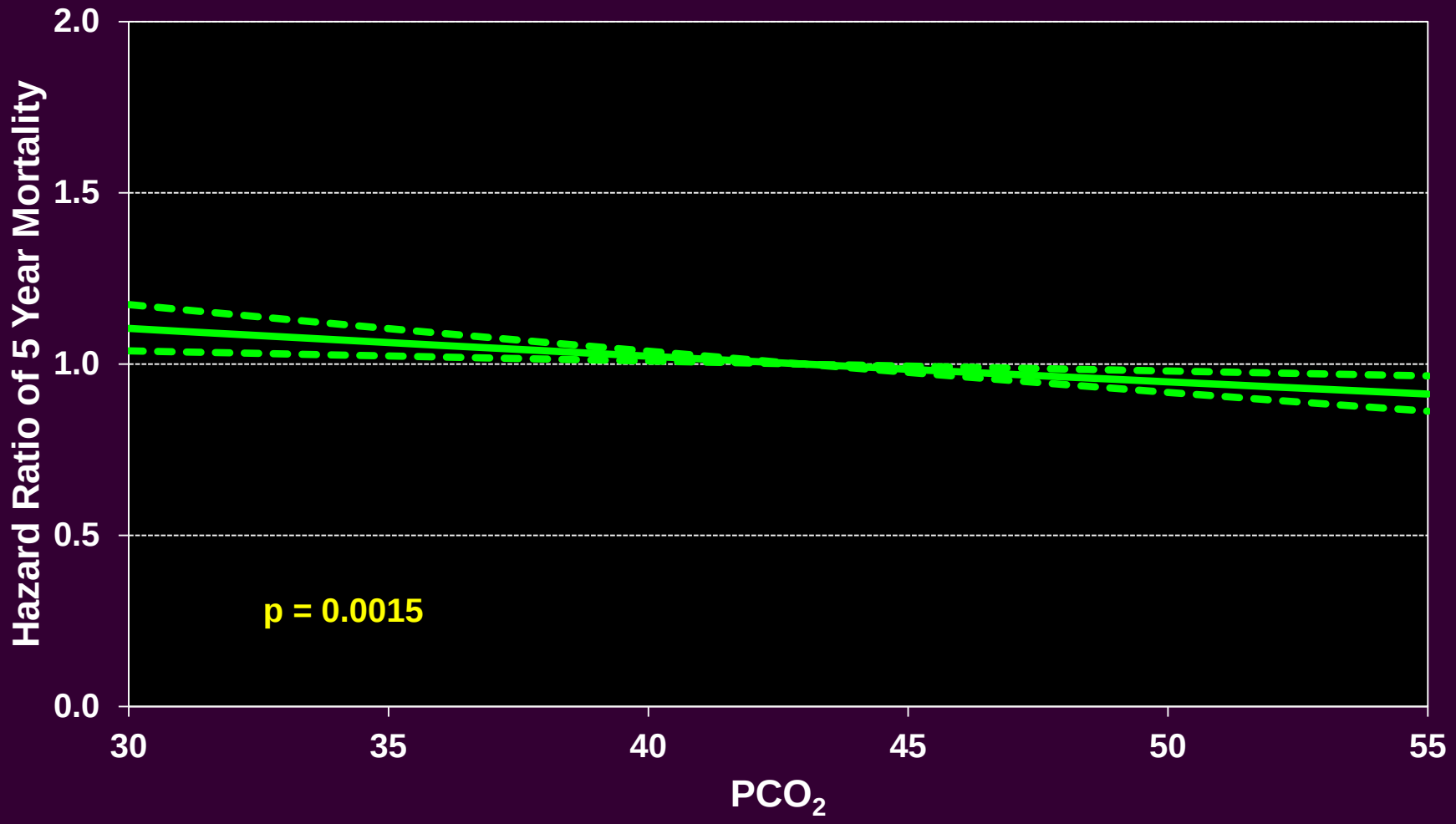
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Recipient PCO_2



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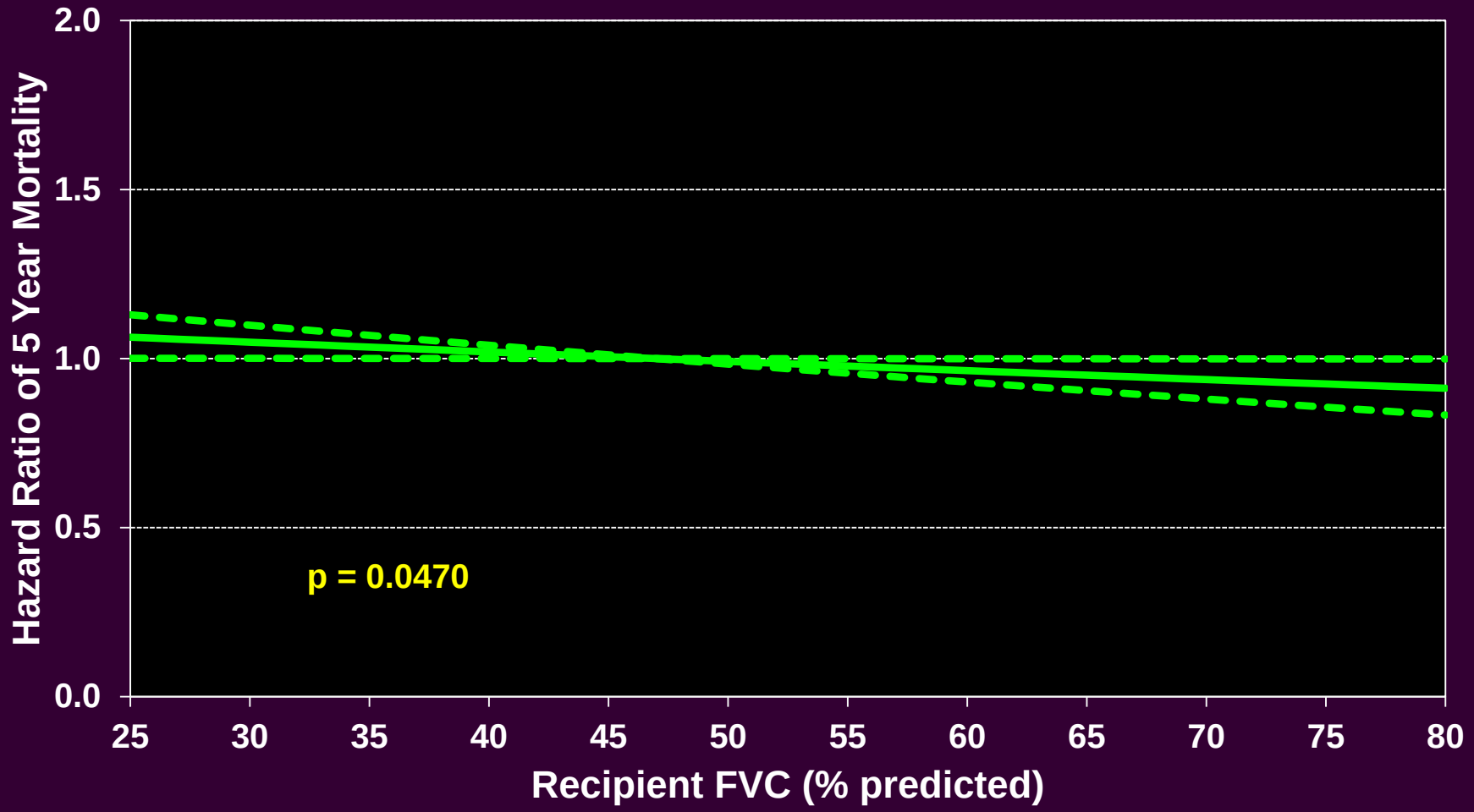
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Recipient FVC (% predicted)



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Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality
Conditional on Survival to 1 Year

DIAGNOSIS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
COPD/Emphysema, double lung	1,041	0.85	0.0299	0.73 - 0.98
IPF, double lung	648	0.77	0.0167	0.62 - 0.95
Other*	274	0.71	0.0070	0.55 - 0.91
Alpha-1 antitrypsin deficiency, double lung	255	0.70	0.0086	0.53 - 0.91
IPAH	194	0.66	0.0269	0.45 - 0.95
Cystic Fibrosis	1,065	0.62	<.0001	0.49 - 0.79
LAM	72	0.50	0.0106	0.30 - 0.85

*** Reference group = COPD/Emphysema, Single lung**

N = 7,318

Other = All diagnoses other than COPD, IPAH, IPF, cystic fibrosis, pulmonary fibrosis, bronchiectasis, alpha-1 antitrypsin deficiency, retransplant , LAM and Connective Tissue Disease.

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Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality
Conditional on Survival to 1 Year

DONOR CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Donor cause of death = stoke vs. head trauma	2,649	1.11	0.0212	1.02 - 1.22
RECIPIENT CHARACTERISTICS				
Pulmonary embolism	57	1.6	0.0193	1.08 - 2.38
Hospitalized (including ICU)	593	1.26	0.004	1.08 - 1.48
History of diabetes	857	1.20	0.0051	1.06 - 1.37
Ventilator	154	0.64	0.0087	0.46 - 0.89
TRANSPLANT CHARACTERISTICS				
Donor CMV +/ Recipient CMV -	1,437	1.14	0.0096	1.03 - 1.26

N = 7,318

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Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality
Conditional on Survival to 1 Year

POST-TRANSPLANT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
OB within 1 year post-transplant	574	1.83	<.0001	1.61 - 2.07
Post-transplant dialysis prior to discharge	187	1.52	0.0004	1.21 - 1.91
Rejection within 1 year post-transplant	3,120	1.31	<.0001	1.20 - 1.42
Polyclonal used for induction	973	1.13	0.0453	1.00 - 1.27
Treated for infection by discharge	3,014	1.09	0.0387	1.00 - 1.19
IL-2R antagonist used for induction	2,377	0.91	0.037	0.82 - 0.99

N = 7,318

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Adult Lung Transplants (January 1999 – June 2007) *Borderline Significant* Risk Factors For 5 Year Mortality Conditional on Survival to 1 Year

CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Prior sternotomy	201	1.24	0.0581	0.99 - 1.55
Not ABO identical	622	1.14	0.0639	0.99 - 1.31
Female recipient/male donor vs. male recipient/male donor	1,412	1.12	0.0620	0.99 - 1.26
Drug treated hypertension within 1 year post-transplant	3,510	1.08	0.0505	1.00 - 1.18
Diagnosis = Sarcoidosis	220	0.75	0.0537	0.56 - 1.00

N = 7,318

* Reference group = COPD/Emphysema, Single lung

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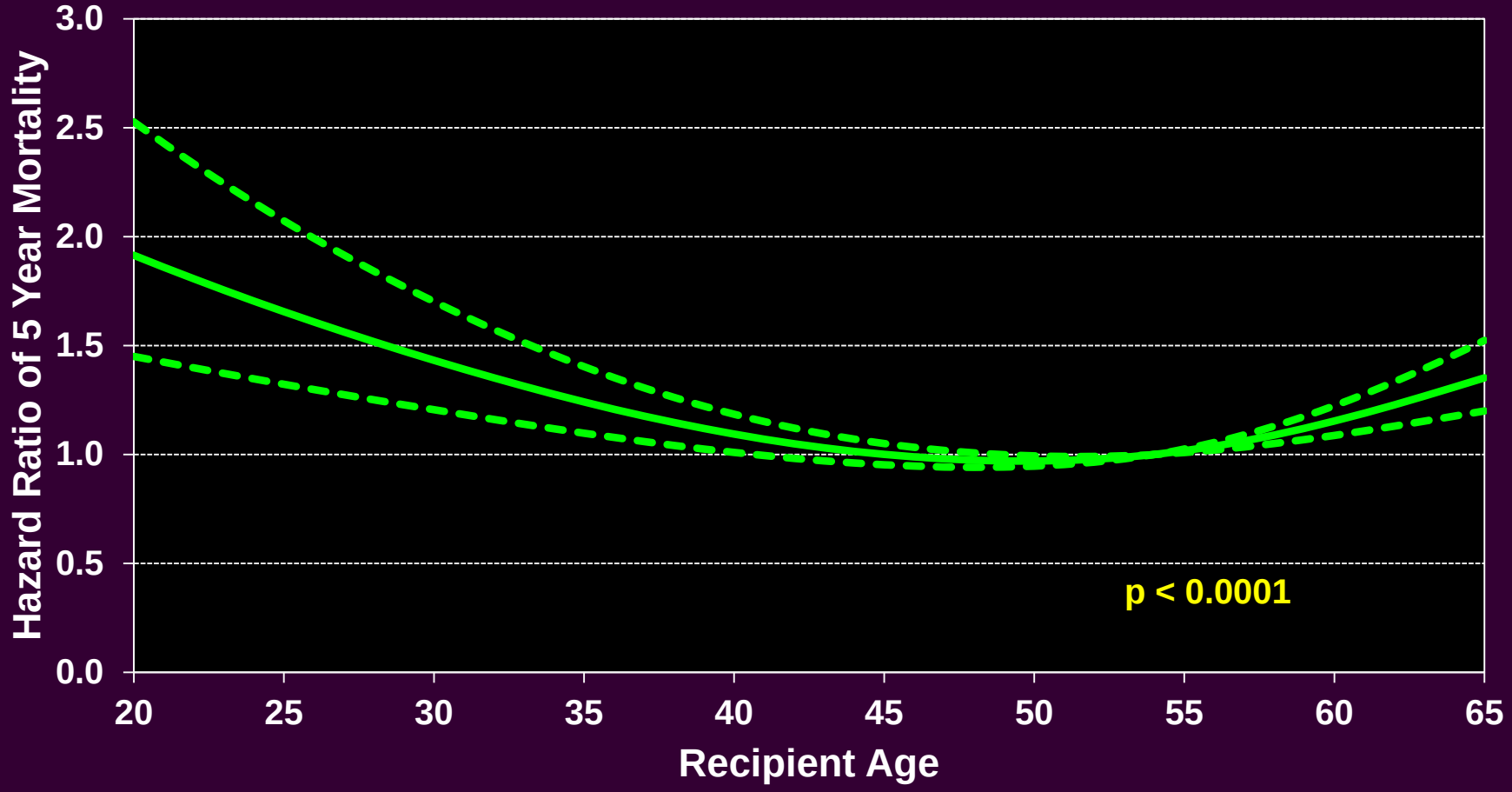
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality
Conditional on Survival to 1 Year

Continuous Factors (see figures)

Recipient age	Recipient oxygen required at rest
Transplant center volume	PVR
Cardiac output	Ischemia time (borderline)

Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Recipient Age



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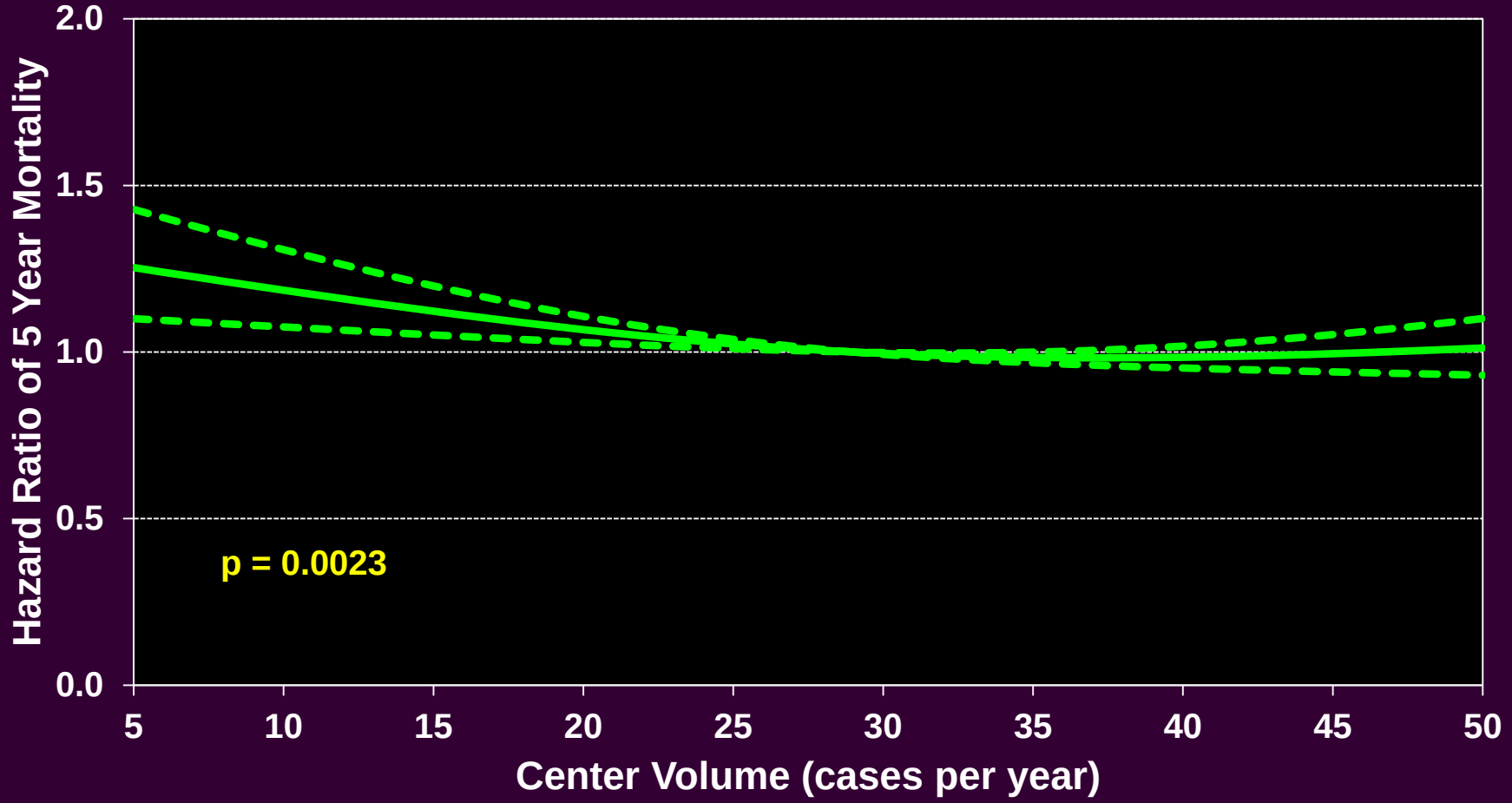
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Center Volume



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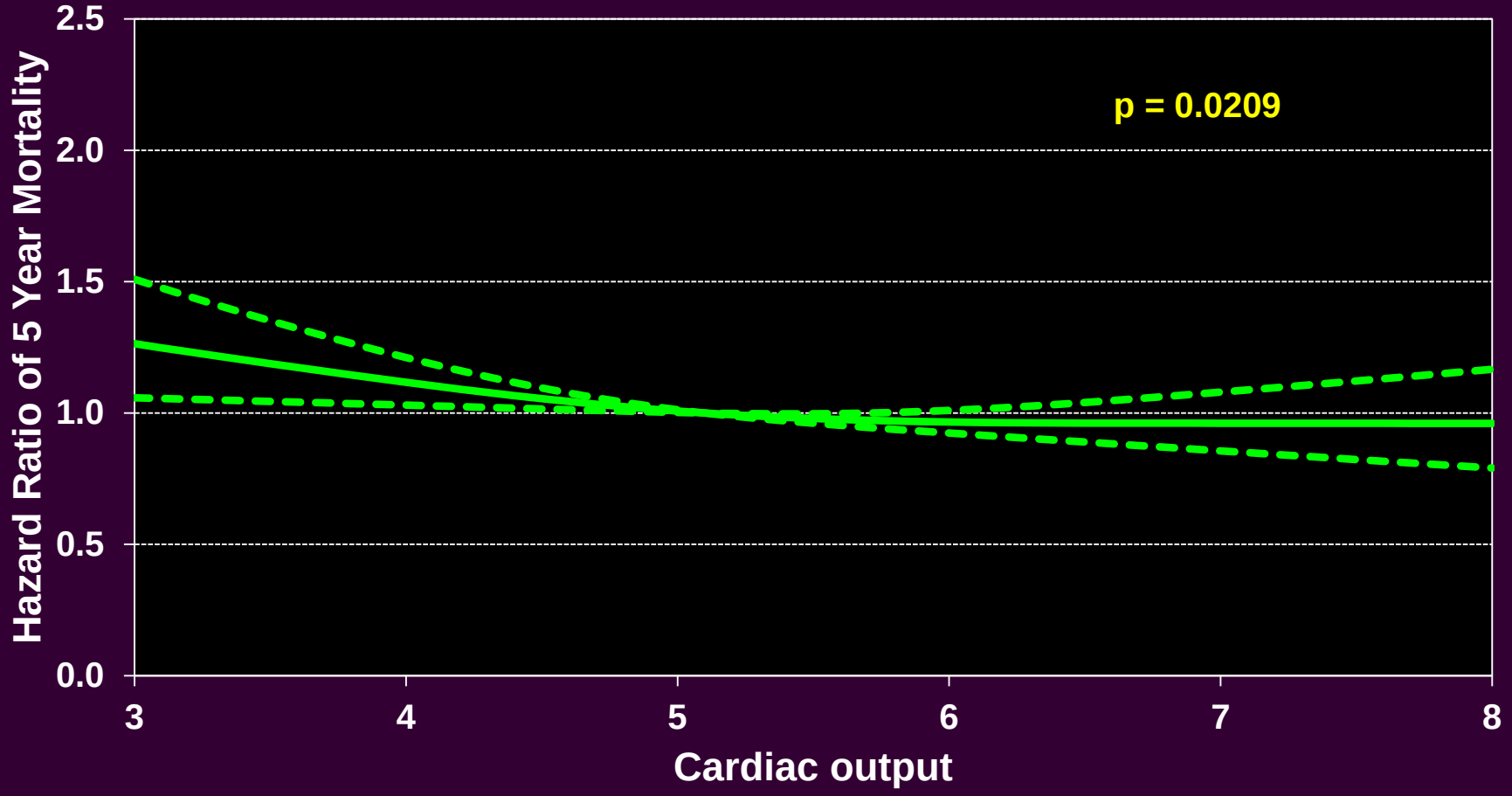
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Recipient Pre-Transplant Cardiac Output



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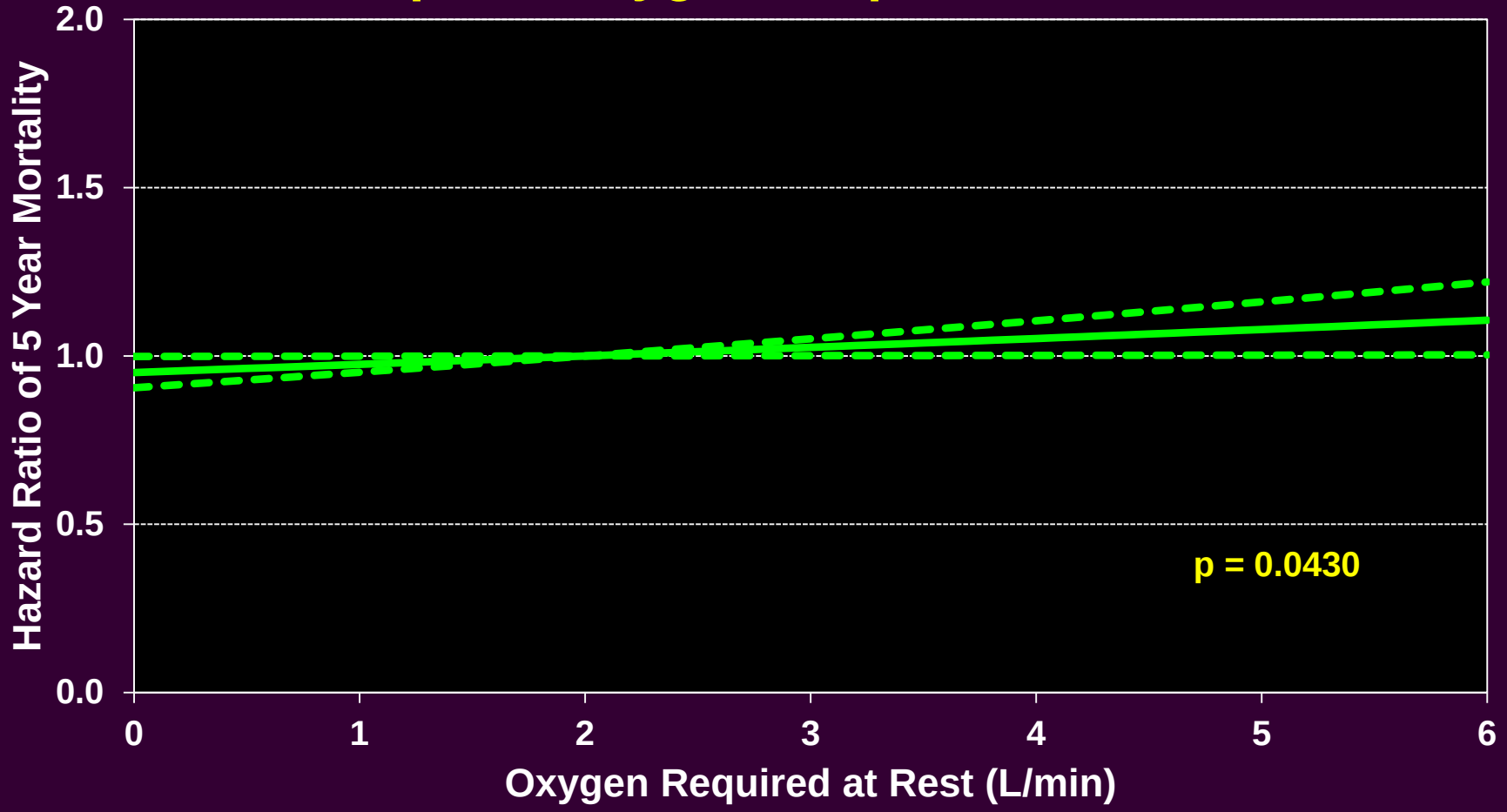
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Recipient Oxygen Required at Rest



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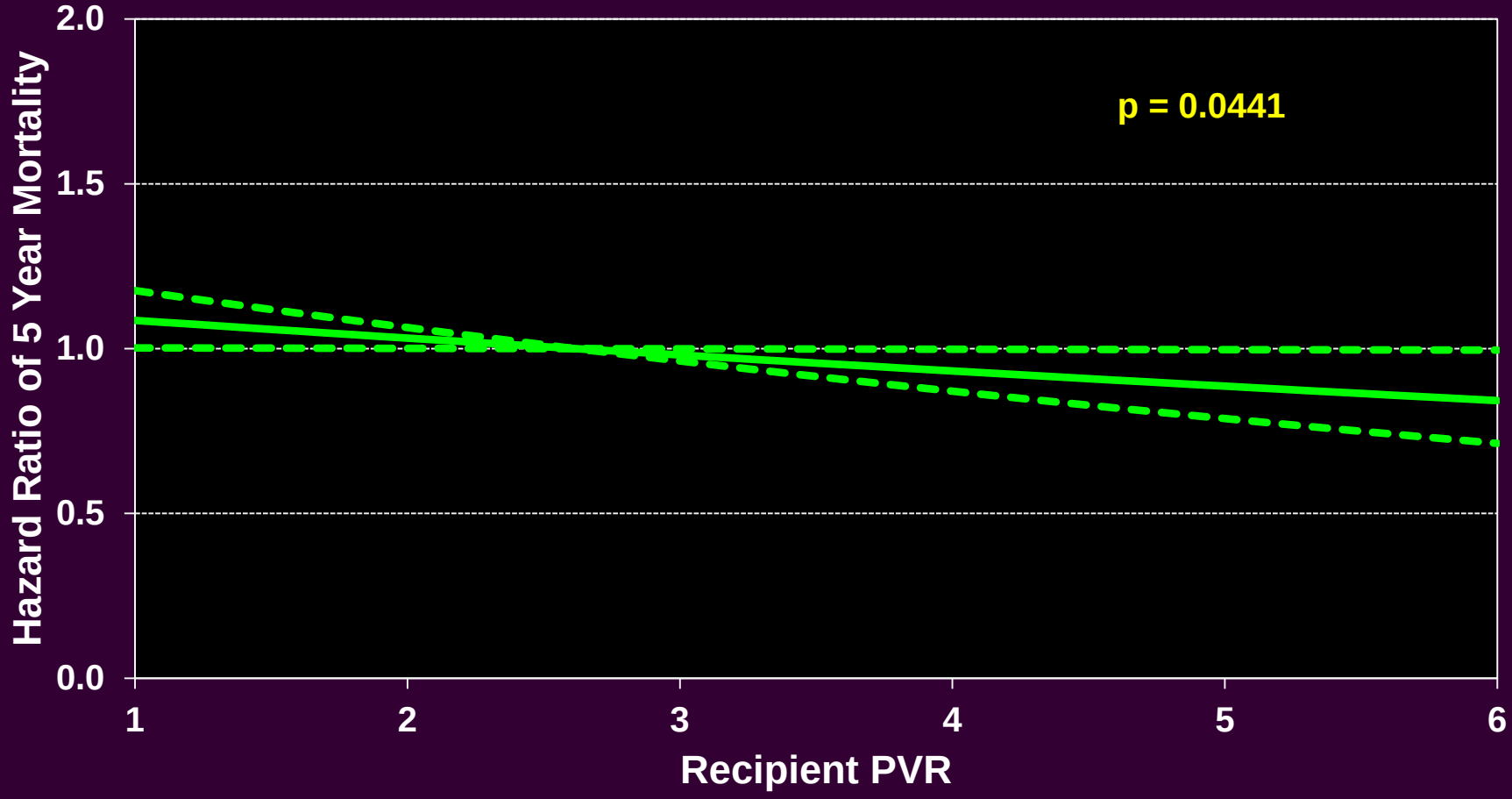
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Recipient PVR



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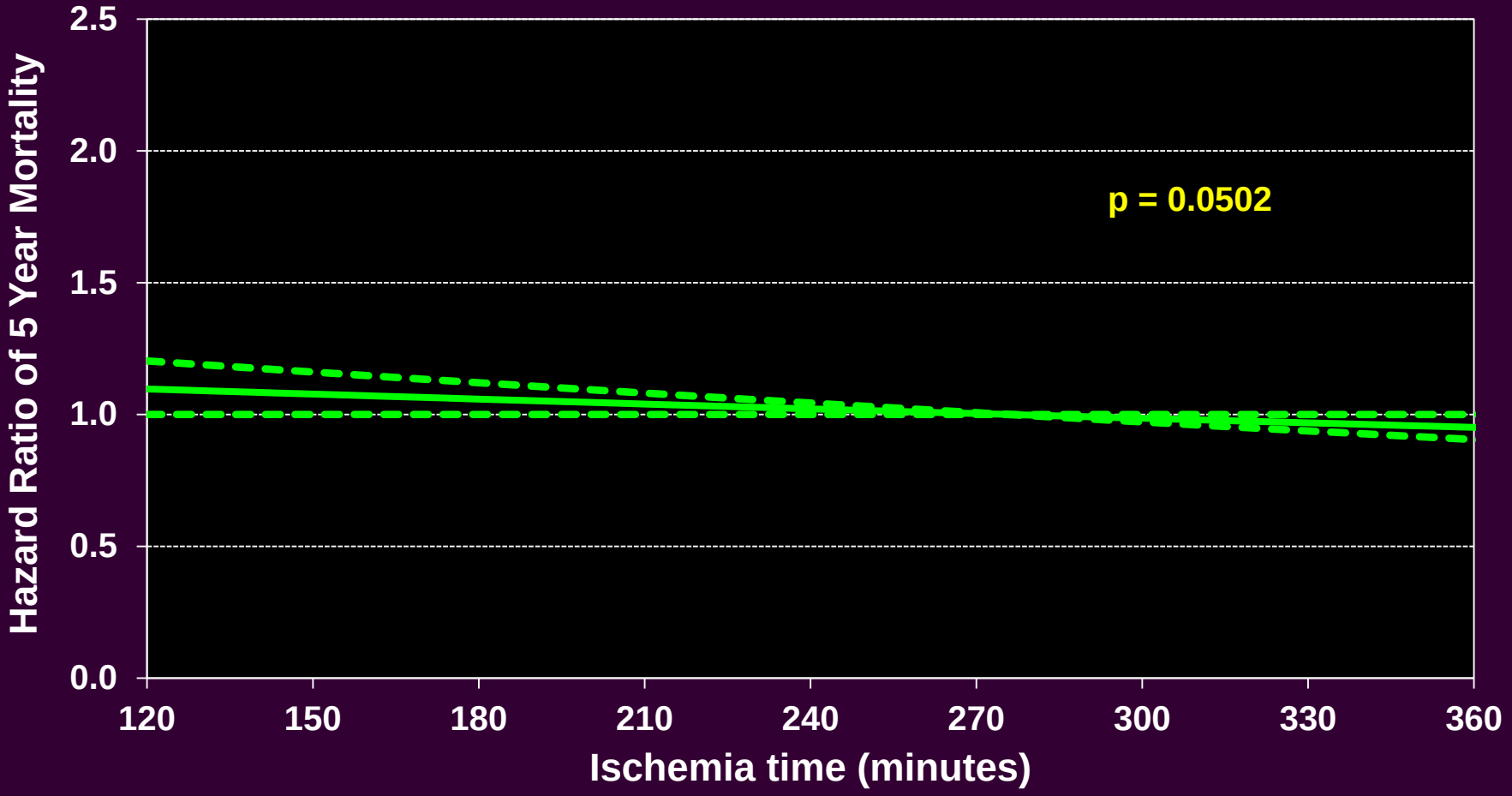
Adult Lung Transplants (January 1999 – June 2007)
Risk Factors For 5 Year Mortality with 95% Confidence Limits
Conditional on Survival to 1 Year
Ischemia Time



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Adult Lung Transplants (January 1996 – June 2002)
Risk Factors For 10 Year Mortality

*DIAGNOSIS**	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Retransplant	131	1.36	0.0062	1.09 - 1.69
Alpha-1 antitrypsin deficiency, single lung	259	1.27	0.0025	1.09 - 1.49
Cystic Fibrosis	783	0.8	0.0207	0.66 - 0.97
COPD/Emphysema, double lung	553	0.78	<.0001	0.69 - 0.88
IPF, double lung	215	0.78	0.0199	0.63 - 0.96
LAM	51	0.57	0.0084	0.37 - 0.87
DONOR CHARACTERISTICS				
Donor history of diabetes	142	1.41	0.0005	1.16 - 1.71
Donor history of cancer	68	1.34	0.0348	1.02 - 1.76

N = 5,484

*** Reference group = COPD/Emphysema, Single lung**

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Adult Lung Transplants (January 1996 – June 2002)
Risk Factors For 10 Year Mortality

RECIPIENT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
IV inotropes	89	1.54	0.0017	1.18 - 2.02
Prior sternotomy	222	1.26	0.0040	1.08 - 1.48
Recipient history of diabetes	386	1.18	0.0117	1.04 - 1.35
Hospitalized (including ICU)	423	1.16	0.0402	1.01 - 1.35
Chronic steroid use	2,574	1.09	0.0123	1.02 - 1.17

N = 5,484

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Adult Lung Transplants (January 1996 – June 2002)
Risk Factors For 10 Year Mortality

TRANSPLANT CHARACTERISTICS	*N*	*Hazard Ratio*	*P-value*	*95% Confidence Interval*
Transplant year = 1996/1997 vs. 2001/2002	1,531	1.22	<.0001	1.12 - 1.34
Transplant year = 1998/1999 vs. 2001/2002	1,587	1.20	<.0001	1.10 - 1.31
Donor CMV +/ Recipient CMV -	1,011	1.16	0.0007	1.06 - 1.26
Transplant year = 1997/1998 vs. 2000/2001	1,542	0.82	0.0080	0.71 - 0.95
BORDERLINE SIGNIFICANT				
Diagnosis* = Pulmonary Fibrosis	71	0.76	0.0805	0.56 - 1.03

N = 5,484

*** Reference group = COPD/Emphysema, Single lung**

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Adult Lung Transplants (January 1996 – June 2002)
Risk Factors For 10 Year Mortality

Continuous Factors (see figures)

Recipient age

Transplant center volume

Donor Age

Cardiac output

Recipient oxygen required at rest

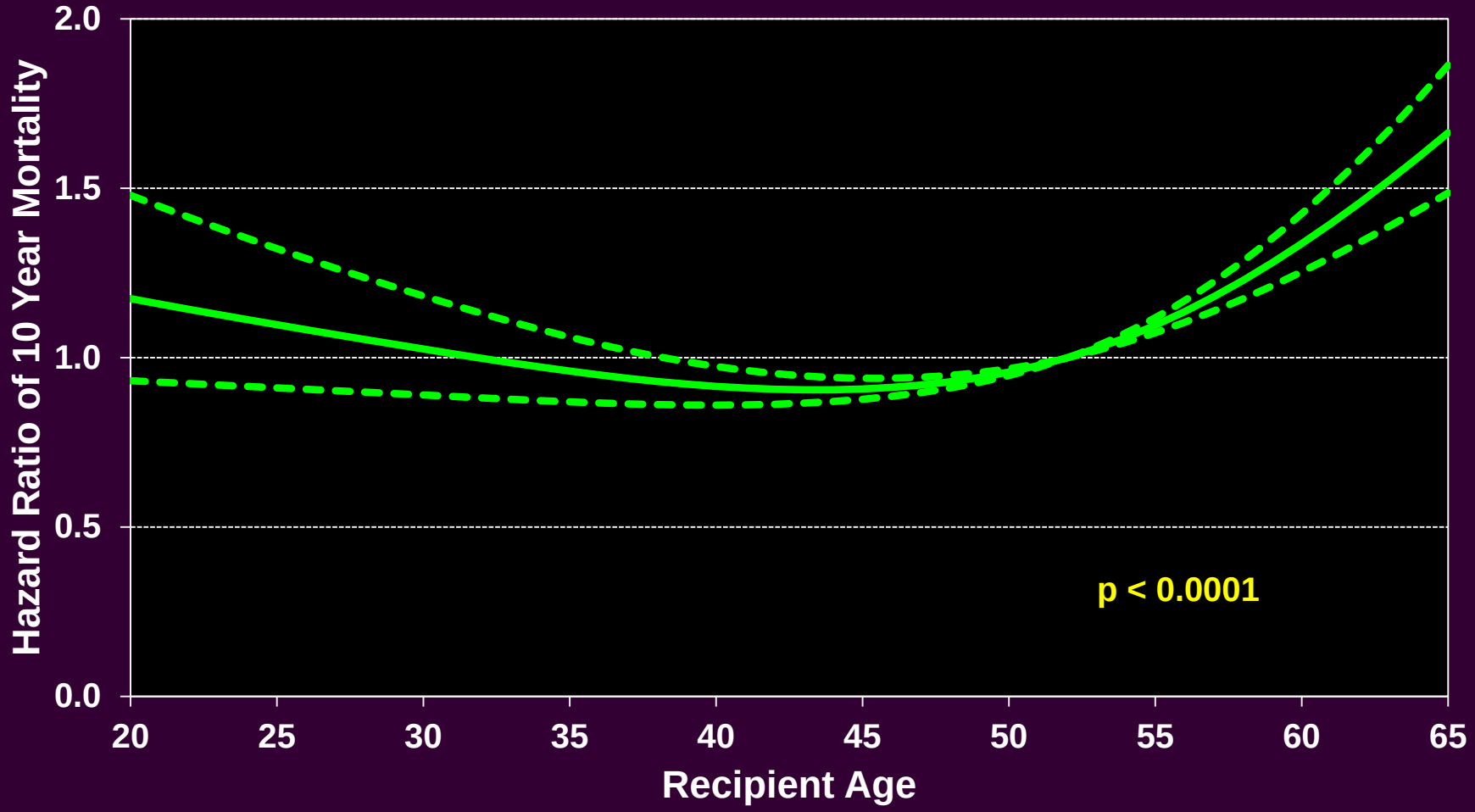
Recipient weight

Donor height

Adult Lung Transplants (January 1996 – June 2002)

Risk Factors For 10 Year Mortality with 95% Confidence Limits

Recipient Age



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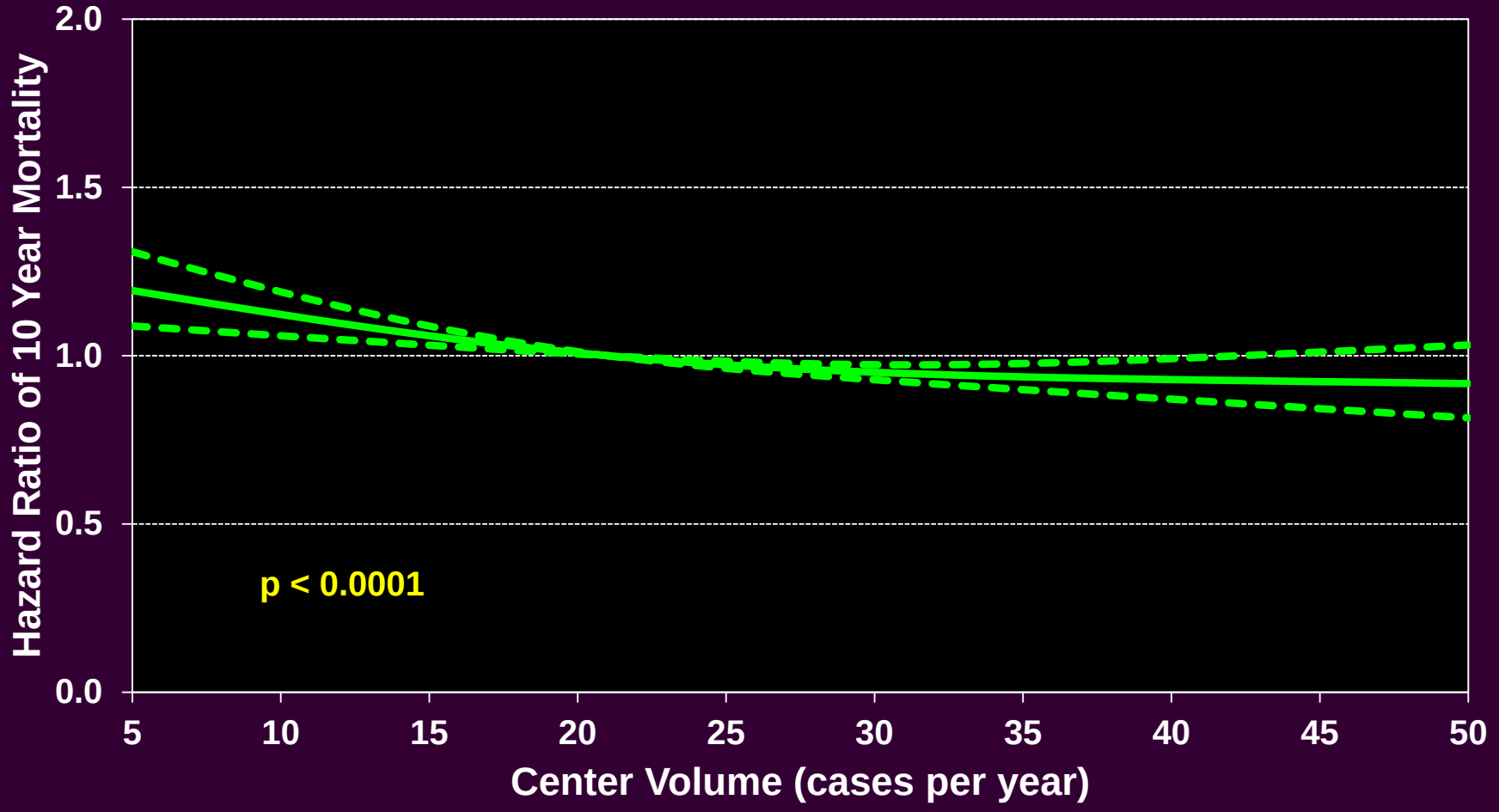
Adult Lung Transplants (January 1996 – June 2002)

Risk Factors For 10 Year Mortality with 95% Confidence Limits

Center Volume



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Adult Lung Transplants (January 1996 – June 2002)

Risk Factors For 10 Year Mortality with 95% Confidence Limits

Donor Age

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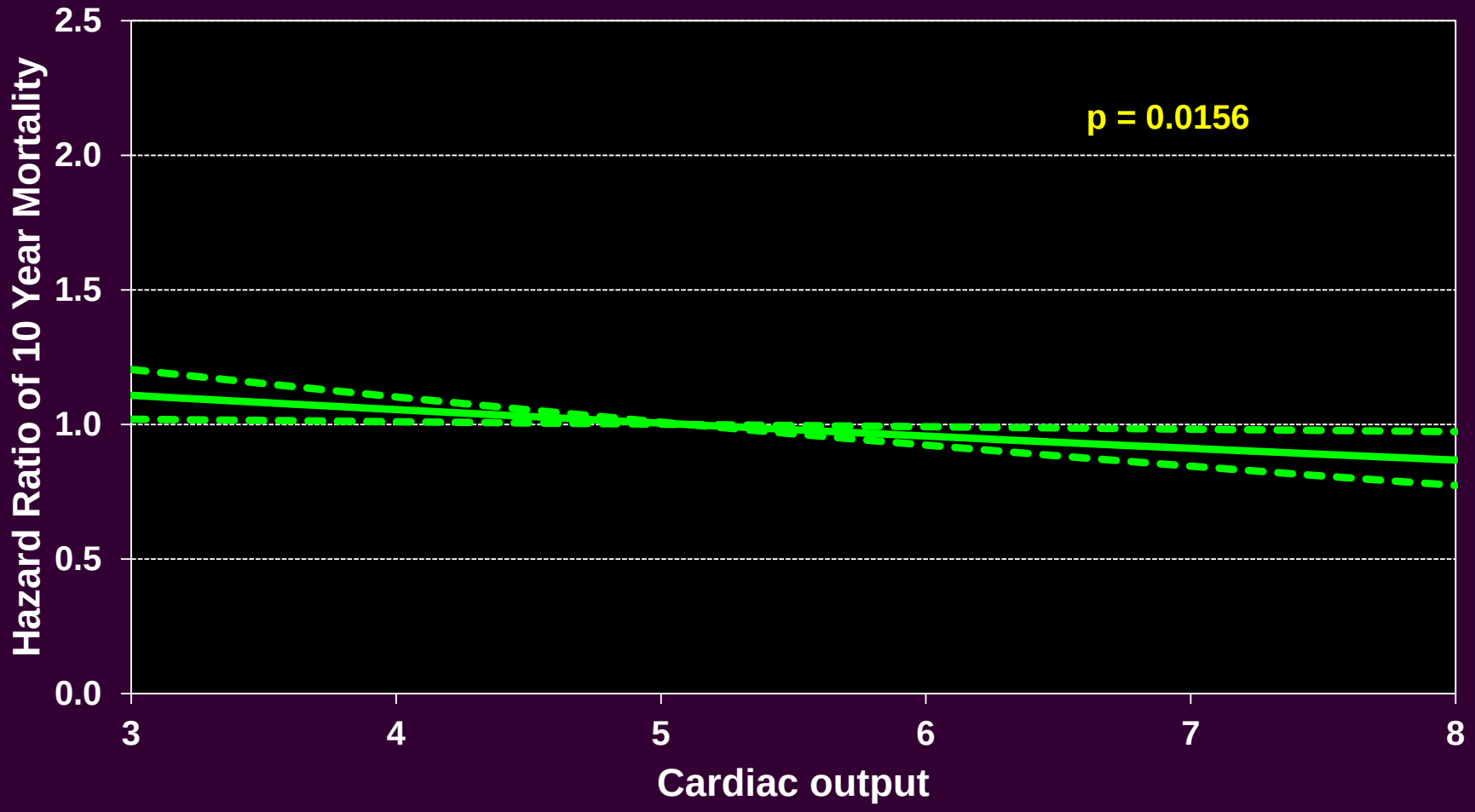
Adult Lung Transplants (January 1999 – June 2007)

Risk Factors for 10 Year Mortality with 95% Confidence Limits

Recipient Pre-Transplant Cardiac Output



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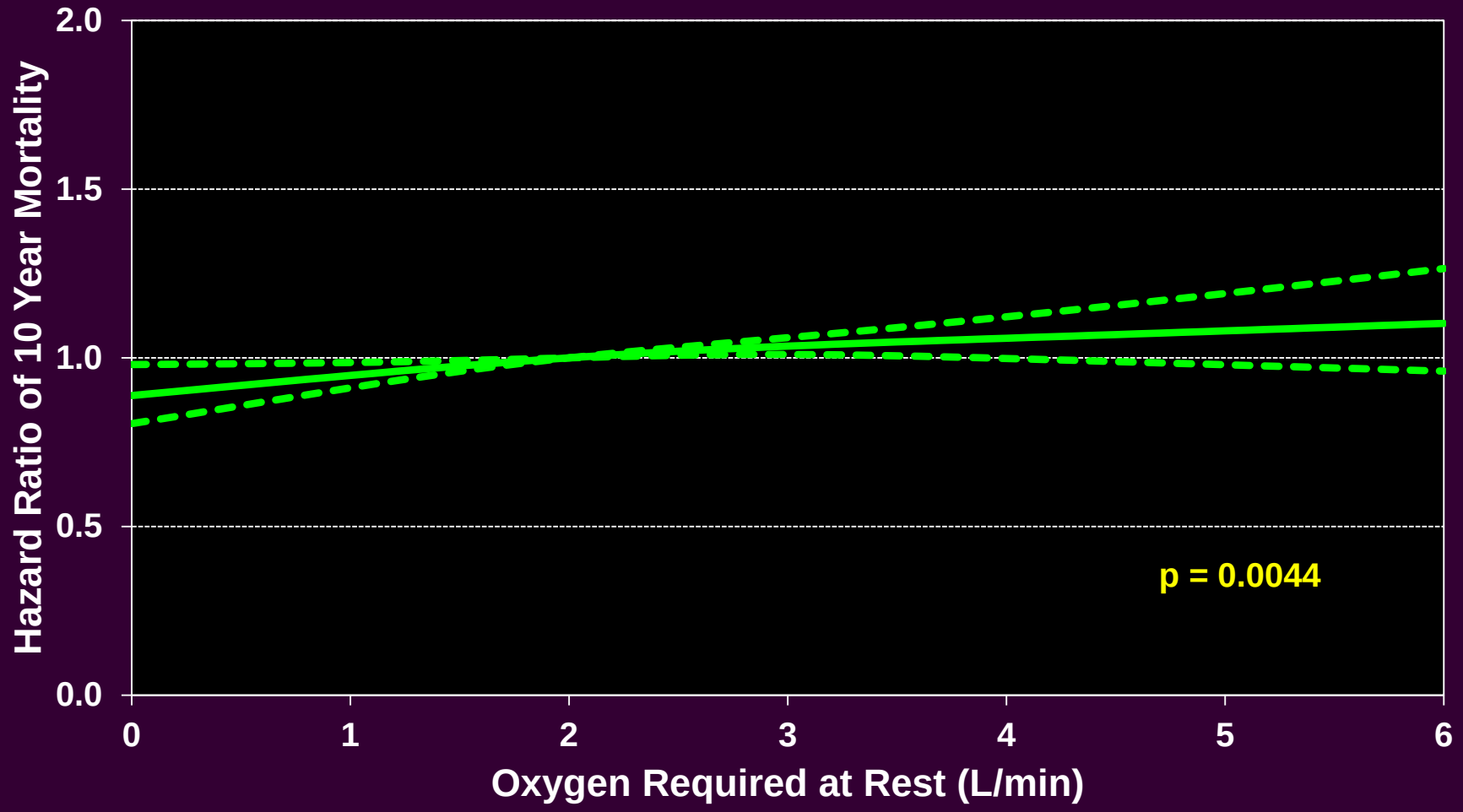
Adult Lung Transplants (January 1999 – June 2007)

Risk Factors for 10 Year Mortality with 95% Confidence Limits

Recipient Oxygen Required at Rest



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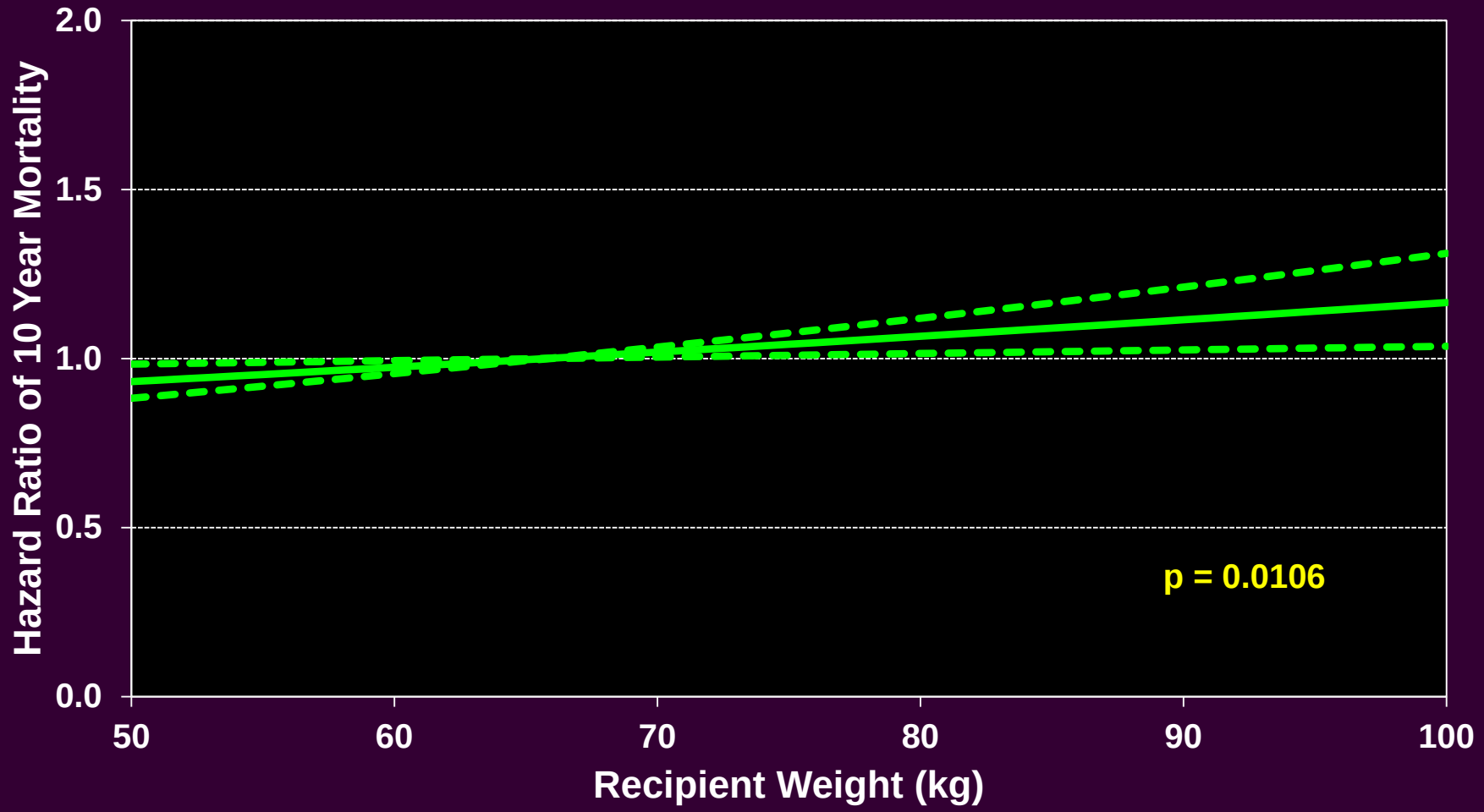
Adult Lung Transplants (January 1996 – June 2002)

Risk Factors For 10 Year Mortality with 95% Confidence Limits

Recipient Weight



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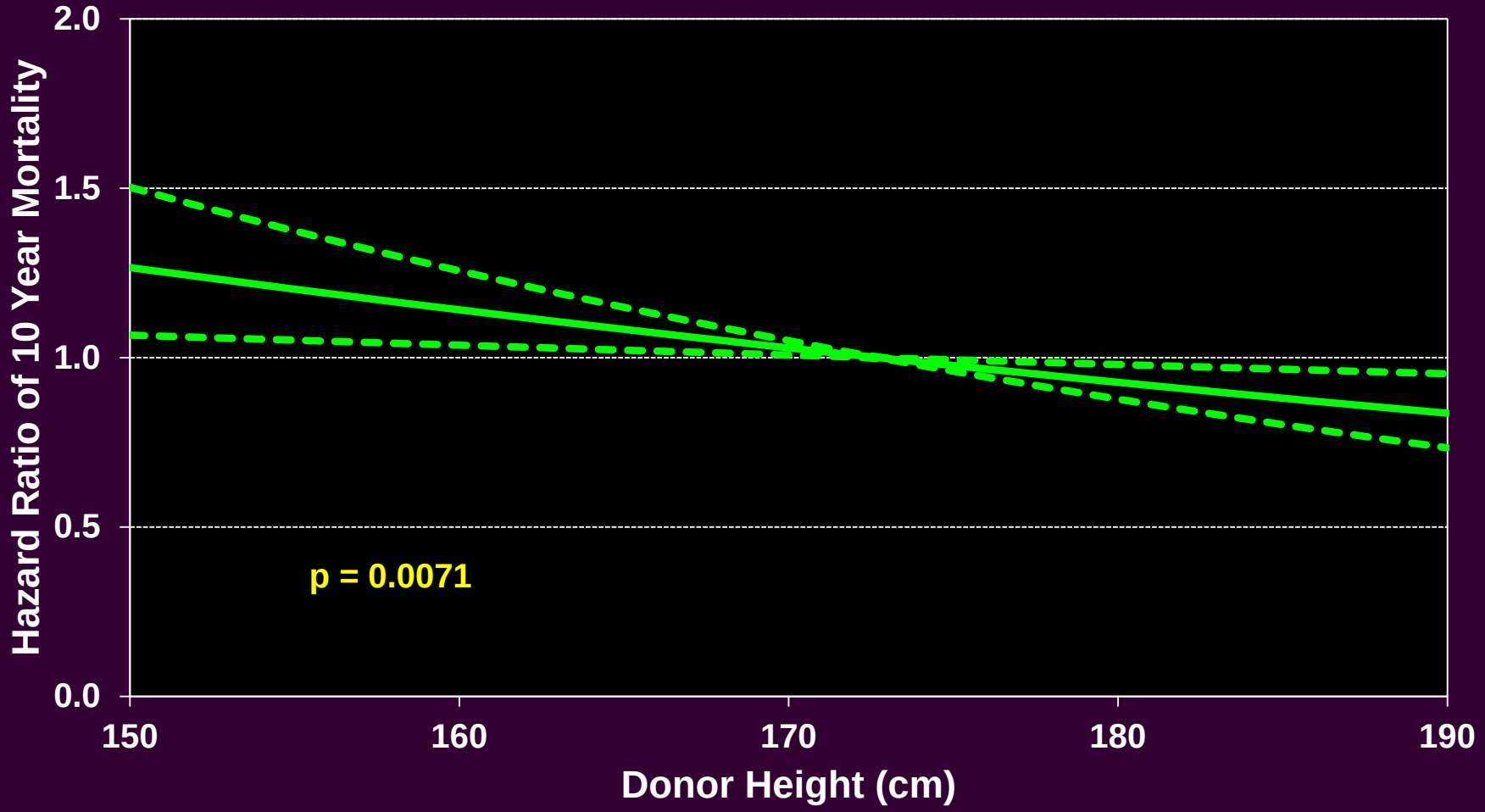
Adult Lung Transplants (January 1996 – June 2002)

Risk Factors For 10 Year Mortality with 95% Confidence Limits

Donor Height



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