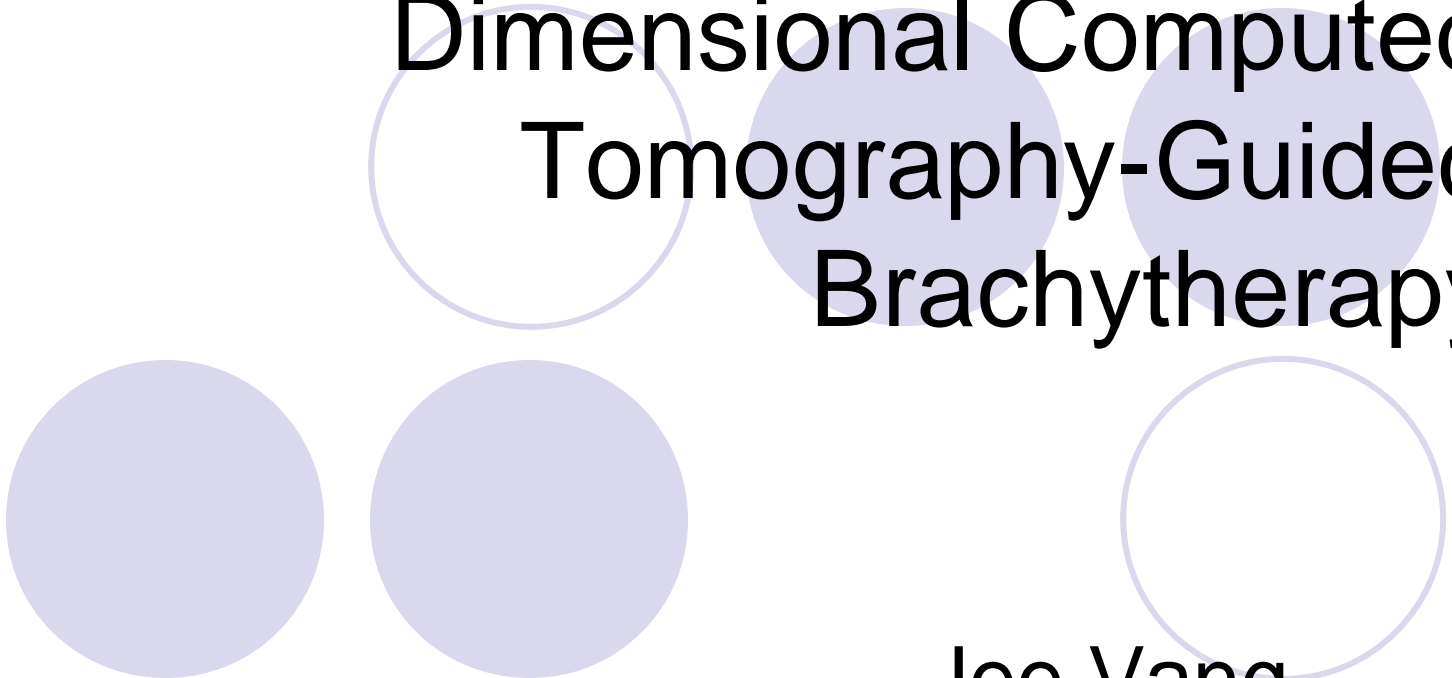


# Visualizing Prostate Cancer Patients Treated with Three- Dimensional Computed Tomography-Guided Brachytherapy

The slide features several decorative circles. There are two solid light purple circles on the left side. On the right side, there are two overlapping solid light purple circles and one hollow light purple circle below them.

Jee Vang

Faleh Al-Shameri

May 5, 2003

# Background on Prostate Cancer

- Most common cancer among US men
- In year 2002
  - 189,000 US men diagnosed with prostate cancer
  - (of which) 30,200 died from prostate cancer
- Risk factors
  - Age: White male over 50, Black male at 40
  - Race: Black male have incidence 1.5 times white male (China and Japan lowest)
  - Family History: Male with first-degree relative with prostate cancer has twice increased risk for prostate cancer

# Clinical Indicators of Prostate Cancer

- Prostate-specific antigen (PSA)
  - Continuous value (above 0.0)
- Gleason's score
  - Whole numbers (1 – 10)
- Stage
  - T1a, T1b, T1c, T2a, T2b, T3a, T3b, T4



# Treatments for Prostate Cancer

- No standard treatment
- Hormones
- Radical prostatectomy
- External-beam radiation therapy (EBRT)
- Interstitial radiotherapy (seeds)

# Three-dimensional Computed tomography-guided Brachytherapy (3DCTGB)

- Developed in 1995 by Dr. Panos Koutrouvelis at Uro-Radiology Prostate Institute
- Uses CT to visualize prostate and guide appropriate doses of radioactive seeds to diseased areas

# Project Dataset



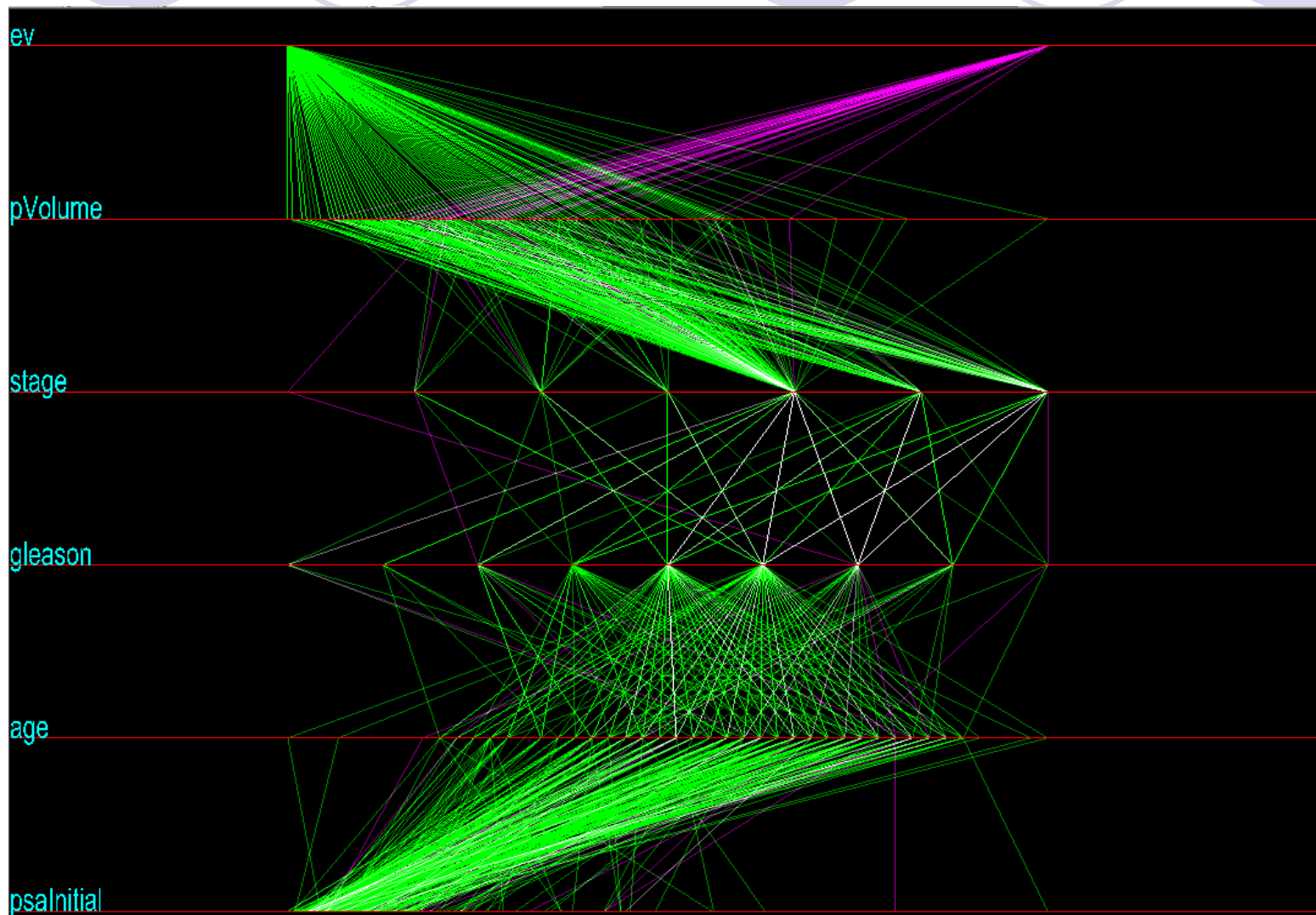
- 673 patients treated between June 1, 1994 and June 30, 2002
- Only 539 patients had enough follow-up PSAs to be used for biochemical analysis—hence our visualization
- We looked at 6 variables: initial PSA, initial prostate volume, Gleason's score, stage, age, and indicator of success/failure

# Biochemical Results of Patients Treated with 3DCTGB n 539

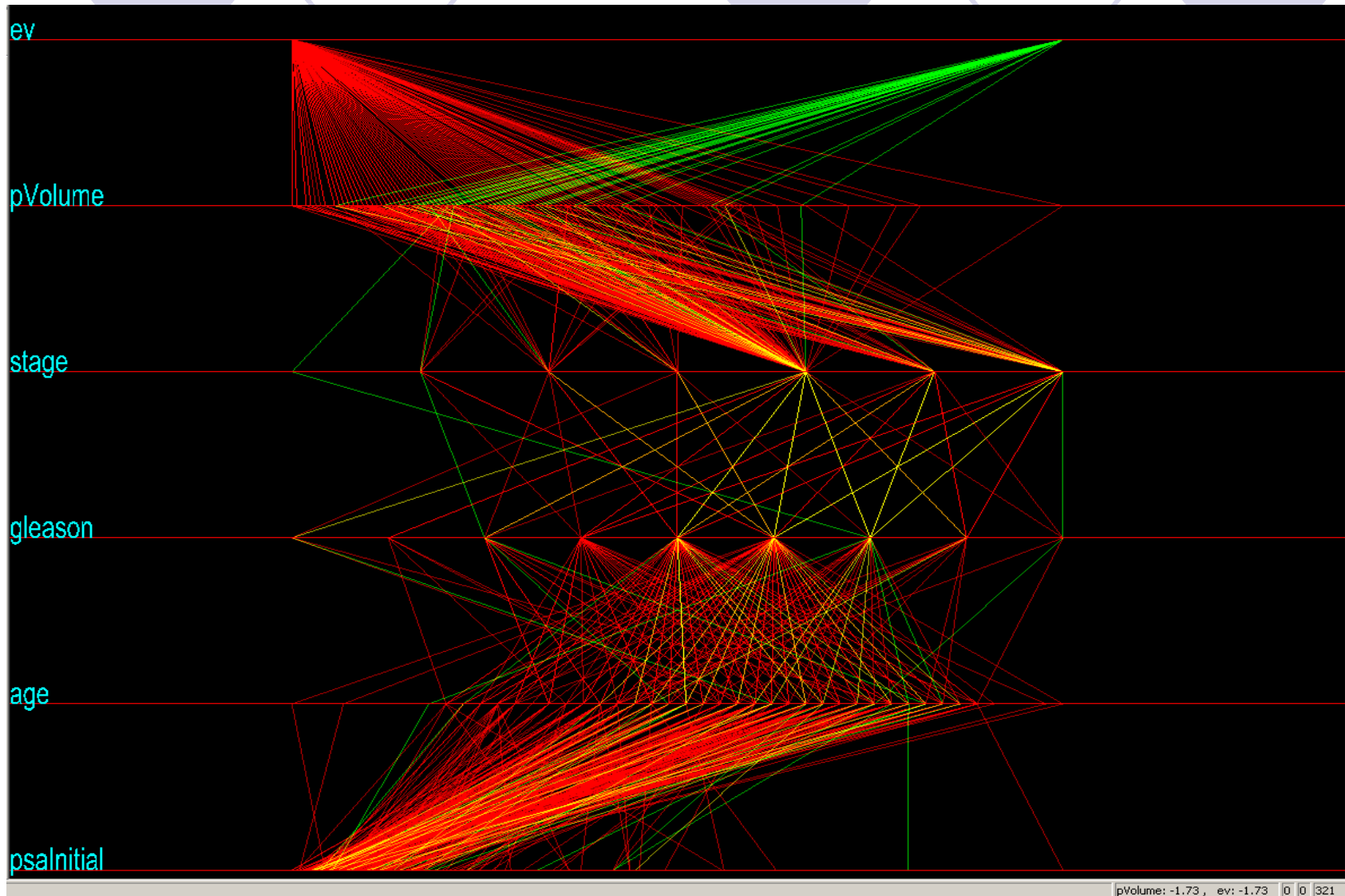
Risk Profile	# Patients	bNED* %
High	321	292 (91%)
Intermediate	74	72 (97%)
Low	144	143 (99%)
	539	507 (94%)

\*Biochemical no evidence of disease.

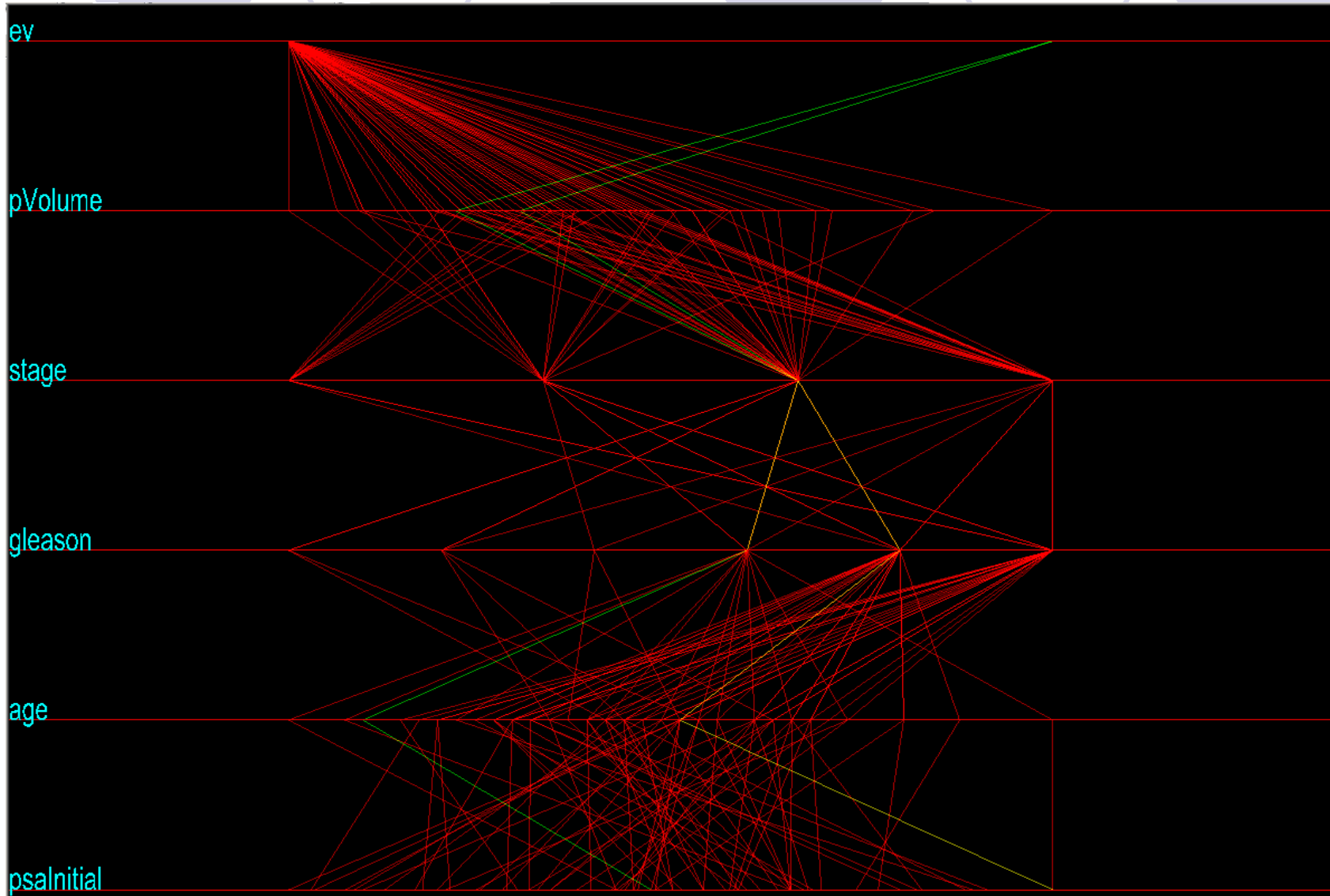
All Patients n 539



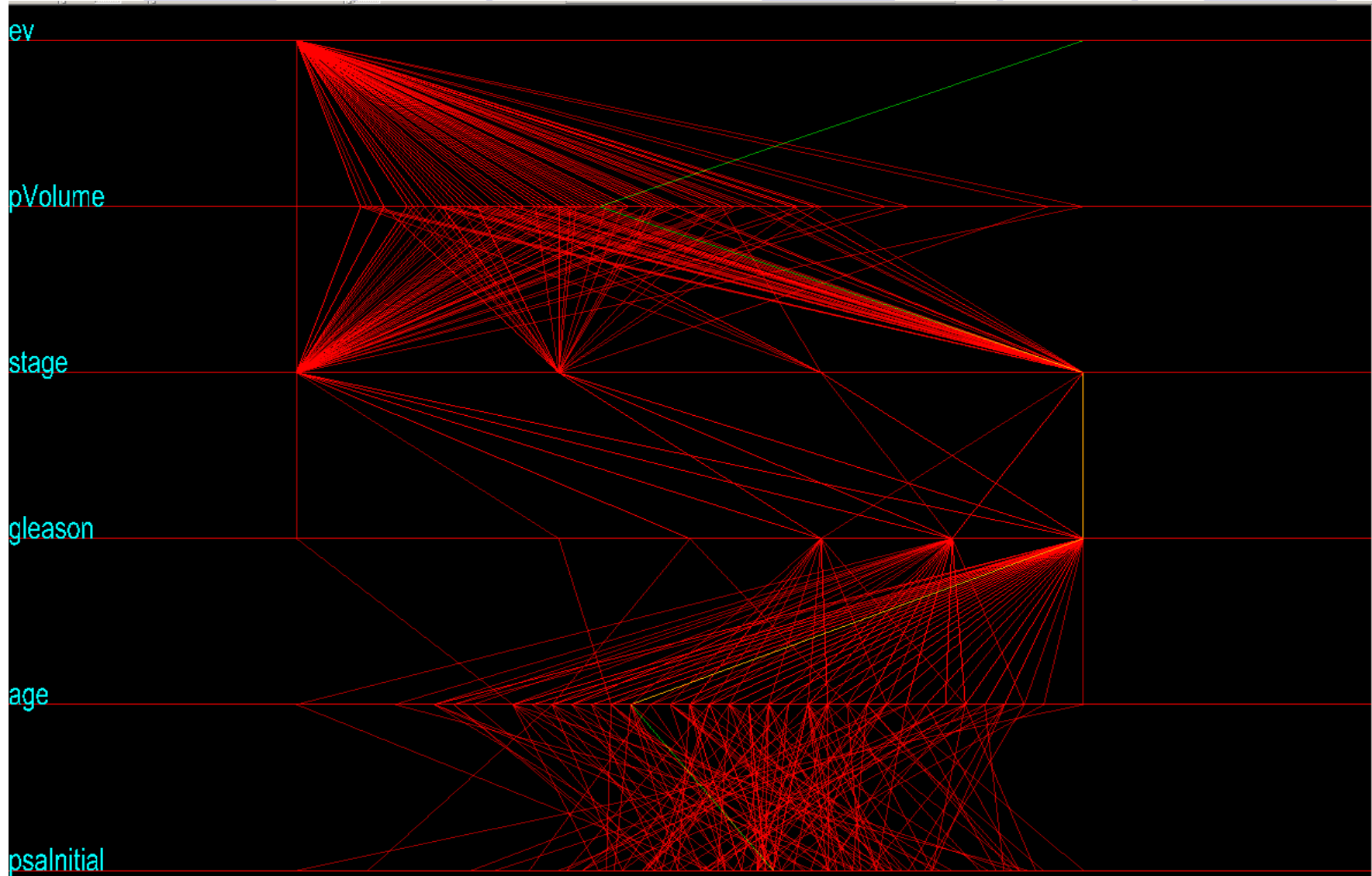
# High Risk Patients n 321



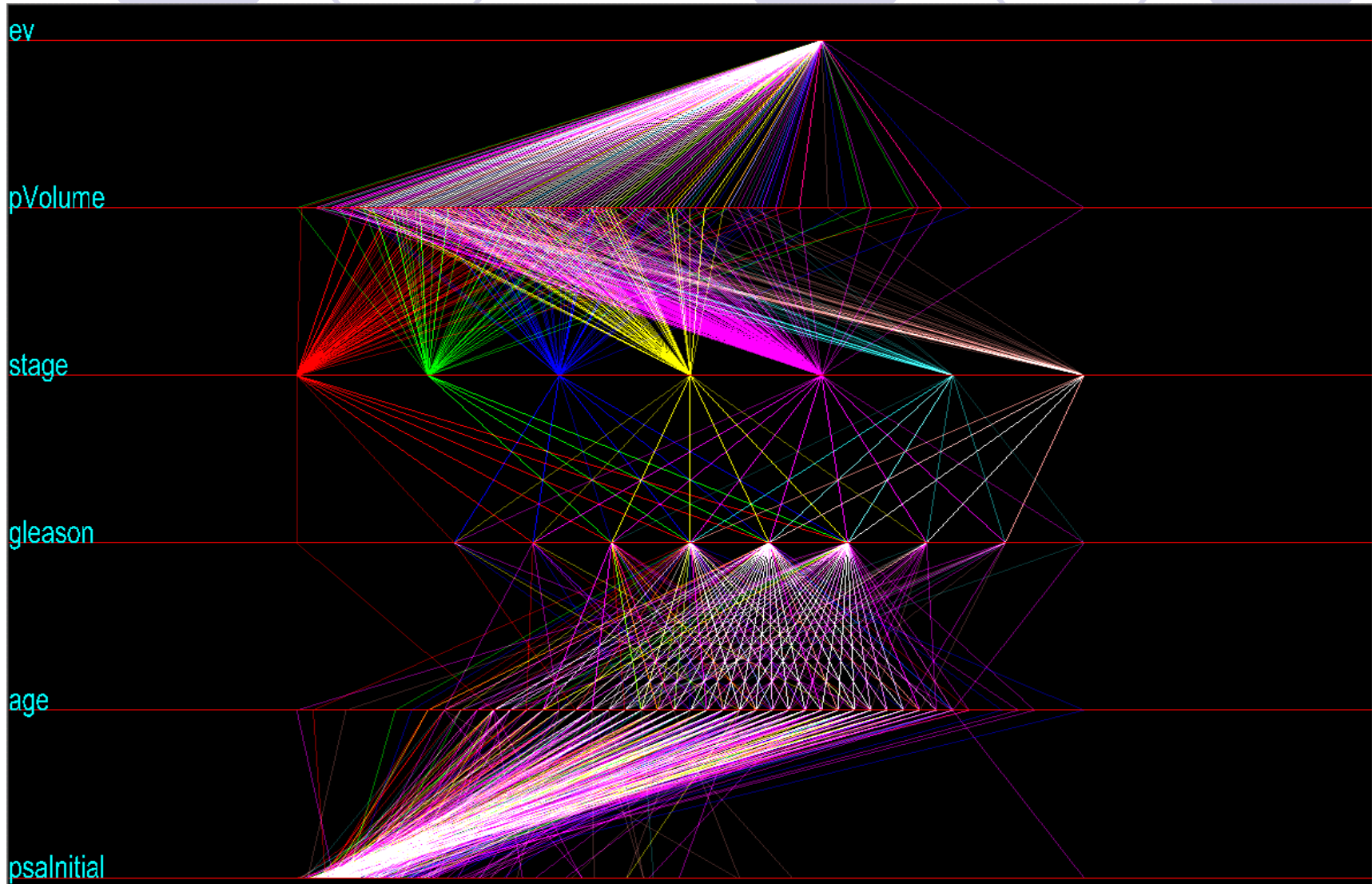
# Intermediate Risk Patients n 74



# Low Risk Patient n 144



# Successful Patients under 3DCTGB





# Discussion and Conclusion

- Successful patients under 3DCTGB have low initial PSA
- Patients who failed under 3DCTGB have both high Gleason's score and stage
- Outliers indicate that old age or a high initial PSA value may also lead to failure