

Prostate cancer has a variety of prognostic features. One of the most important prognostic features is the Gleason Score. Gleason was a pathologist who tried to give a better estimate of prognosis based upon appearance under the microscope. Gleason made a scale of 1 to 5 - with 1 being the best and 5 being the worst in a particular area.

He scored a second dominant area in a similar fashion (1 to 5) and then added up the scores. This meant that a person who had prostate cancer Gleason 1+1=2 has a superb prognosis while one who has a 5+5=10 has a much less promising prognosis.

Doctors use Gleason score routinely. Gleason score helps the patient, family as well as physicians judge the prognosis of the cancer. Of course, the Gleason score is not perfect and sometimes it is altered at the time of subsequent biopsy or even surgery.

This is an important feature since Gleason scores underestimate the prognosis about a third of the time. Personally, I don't believe it makes a great deal of difference in our practice when the most common treatment is prostate brachytherapy or seed implantation followed by body radiosurgery. It is certainly important when seeds alone are used or when surgery is utilized since so many men actually have a higher Gleason score and less treatment may result in less optimal outcome.

In a paper by Potters et al in the prestigious International Journal of Radiation Oncology Biology and Physics prognostic evaluation of Gleason score in patients with prostate brachytherapy was performed.

For Gleason 7 cancer patients might have a Gleason 4+3 or 3+4 category. These are the two most common categories making up the group of Gleason 7. Gleason 7 is not commonly made

up of Gleason 5+2 or 2+5. Since men with Gleason 7 and higher prostate cancer have in general a less promising prognosis, it is important to evaluate these sub-groups well.

In this paper, men with either Gleason 3+3, 3+4, 4+3, or 4+4 underwent permanent brachytherapy between 1993 and 1999. All patients who had a greater than 60-gram prostate received several months of hormonal therapy to reduce the size of the prostate and then patients underwent treatment. For those with PSA's less than 10, Gleason scores 2 to 6, and Stage T1 and T2 had brachytherapy alone while those with PSA's greater than 10, Gleason 7 to 10 or clinical stage T2B were considered to have intermediate or high risk prostate cancer and were offered radiation and external beam radiation. The authors note that there was considerable overlap of treatment criteria based upon patient preference however.

When patients had seeds alone the iodine dose was 14,400cGy (a measurement of radiation dose) and for palladium 14,000cGy. When external beam was given the iodine dose was 11,000cGy and palladium 10,500cGy with external beam doses varying from 4,140 to 4,500 rad (a measurement of radiation dose) in 180 rad fractions.

The authors used the ASTRO (American Society of Therapeutic Radiation Oncology) definition of treatment success or failure. This relies most importantly on PSA or Prostatic Specific Antigen blood testing. Follow-up median was 46 months with a range of 3 to 108. Biochemical free at five-years was 78.2% and seven years 76.2%. For those who had Gleason 3+3, seven-year relapse free survival was 81% and for those with Gleason 3+4 was 78.4%. Those with Gleason 4+3 had 56.7% and Gleason 4+4 had 50.7%.

The evaluation of Gleason 3+4 versus Gleason 4+3 was statistically significant when analyzed. Of interest in this paper is that men with Gleason 3+4=7 cancer outperformed those with 4+3=7 cancer. It was reported that those with Gleason 4+3 have a similar prognosis to those with Gleason 4+4.

It is important when we report our data we exclude patients who have hormonal treatment. Hormonal treatment sometimes has long-lasting effects on the PSA and can make PSA more difficult to interpret because it artificially lowers the PSA.