ASTRO®
TARGETING CANCER CARE

News Release

Embargoed until 1:15 p.m. PT, Sunday, September 14, 2014

Contact: Michelle Kirkwood
703-286-1600
michellek@astro.org

Nancy Mayes
Mayes Communications
703-772-2510
nancy@mayescommunications.com

Press Office in San Francisco
September 14-17
415-978-3503
415-978-3504

Shorter course of androgen deprivation therapy for high-risk prostate cancer patients yields improved quality of life

San Francisco, September 14, 2014—High-risk prostate cancer patients who receive radiation therapy (RT) and an 18-month course of androgen deprivation therapy (ADT) recover a normal testosterone level in a shorter amount of time compared to those who receive a 36-month course of ADT, thus resulting in a better quality of life (QOL) and without detriment to long-term outcomes, according to research presented today at the American Society for Radiation Oncology's (ASTRO's) 56th Annual Meeting.

Researchers analyzed data from 561 patients with high-risk prostate cancer from a multi-center, randomized phase III trial in Canada (PCS IV clinical trials, Gov. # NCT 00223171). The patients received RT and long-term ADT. A common ancillary treatment for prostate cancer, ADT reduces levels of androgen hormones in order to prevent prostate cancer cells from growing.

Patients were randomized into two groups—one group of 289 patients who received 18 months of androgen deprivation therapy and RT, and a second group of 272 patients who received 36 months of ADT and RT. In both groups, RT started four months after the beginning of ADT.

Patients' serum testosterone levels were measured at baseline and then at each follow-up visit to assess testosterone levels and recovery time. "Abnormal testosterone" was defined as below the normal level. (This

study defined normal testosterone level as the normal ranges given by each hospital lab participating in the trial.) The time to testosterone recovery between the two groups was compared via Kaplan Meier and log rank tests. All items and scales scores were analyzed with general linear model and repeated measures. Researchers evaluated changes between patients who did recover normal testosterone levels over time, versus those who did not.

With a median follow-up time of 84 months, 55.7 percent (161) patients in the 18-month ADT group recovered normal testosterone levels. In comparison, 44.9 percent (122) patients of the 36-month ADT group recovered normal testosterone levels. Additionally, median time to testosterone recovery was shorter (47.2 months; range 40.1 – 54.3 months), in the 18-month ADT group, compared to the 36-month ADT group (73.2 months, range 58.3 – 88.2 months.

Patients' QOL measurements were assessed using two validated tools: a 30-item questionnaire (EORTC30) and a 25-item questionnaire (EORTC PR25). The 55 items were regrouped into 21 scales; all items and scales scores were linearly transformed to a 0 to 100-point scale. Patient-reported questionnaires were completed before treatment; every six months during ADT; four months post-ADT; and then once a year for five years after treatment. For patients who developed biochemical failure (elevated prostate specific antigen (PSA) levels),QOL evaluations ceased upon beginning a new course of ADT.

When comparing QOL between patients who recovered normal testosterone with those who did not, patients with testosterone recovery had a better QOL: 26 of 55 items and 12 of 21 scales were statistically significant. Similarly, 5 of 26 items and 1 of 21 scales that reached statistical significance were also clinically relevant.

"The results of the analysis are not surprising considering the side effects of ADT, and that testosterone recovery has significant impact on patients' improved quality of life," said lead author Abdenour Nabid, MD, a radiation oncologist at Centre Hospitalier Universitaire de Sherbrooke and an associate professor at the University of Sherbrooke in Quebec, Canada. "In high-risk prostate cancer, the current guideline for ADT duration is between two and three years. Because of improvement in testosterone recovery and quality of life, a good first step could be to choose ADT for two years until we obtain the final results of the ongoing phase III PCS IV trial, which compares 18 months of ADT to 36 months of ADT."

The abstract, "Quality of Life in Patients with Testosterone Recovery after Long Term Androgen Deprivation Therapy for High Risk Prostate Cancer," will be presented in detail during a scientific session at

ASTRO's 56th Annual Meeting at 1:15 p.m. Pacific time on Sunday, September 14, 2014. To speak with Dr. Nabid, please call Michelle Kirkwood on September 14 – 17, 2014, in the ASTRO Press Office at the Moscone Center in San Francisco at 415-978-3503 or 415-978-3504, or email michellek@astro.org.

ASTRO's 56th Annual Meeting, to be held at the Moscone Center in San Francisco, September 14-17, 2014, is the nation's premier scientific meeting in radiation oncology. The 2014 Annual Meeting is expected to attract more than 11,000 attendees including oncologists from all disciplines, medical physicists, dosimetrists, radiation therapists, radiation oncology nurses and nurse practitioners, biologists, physician assistants, practice administrators, industry representatives and other health care professionals from around the world. Led by ASTRO President Bruce G. Haffty, MD, FASTRO, a radiation oncologist specializing in breast cancer, the theme of the 2014 Meeting is "Targeting Cancer: Technology and Biology," and the Presidential Symposium, "Local-regional Management of Breast Cancer: A Changing Paradigm," will feature Jay R. Harris, MD, FASTRO, and Thomas A. Buchholz, MD, FASTRO, to highlight recent practice-changing, landmark studies and current developments in the local-regional management of breast cancer. ASTRO's four-day scientific meeting includes presentation of up to four plenary papers, 360 oral presentations, 1,862 posters and 144 digital posters in more than 50 educational sessions and scientific panels for 20 disease-site tracks. Three keynote speakers will address a range of topics including oncologic imaging, biology and targeting in oncology, and human error and safety concerns: Hedvig Hricak, MD, PhD, Chair of the Department of Radiology and the Carroll and Milton Petrie Chair at Memorial Sloan Kettering Cancer Center; Frank McCormick, PhD, FRS, DSc (hon), Professor Emeritus and the David A. Wood Distinguished Professor of Tumor Biology and Cancer Research of the University of California at San Francisco Helen Diller Family Comprehensive Cancer Center; and Sidney Dekker, PhD, MA, MSc, Professor and Director of the Safety Science Innovation Lab at Griffith University, Brisbane, Australia.

ABOUT ASTRO

ASTRO is the premier radiation oncology society in the world, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals that specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, the Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. ASTRO publishes two medical journals, International Journal of Radiation Oncology • Biology • Physics (www.redjournal.org) and Practical Radiation Oncology (www.practicalradonc.org); developed and maintains an extensive patient website, www.rtanswers.org; and

created the Radiation Oncology Institute (www.roinstitute.org), a non-profit foundation to support research and education efforts around the world that enhance and confirm the critical role of radiation therapy in improving cancer treatment. To learn more about ASTRO, visit www.astro.org.

###

2014 American Society for Radiation Oncology (ASTRO) 56th Annual Meeting
News Briefing, Monday, September 15, 2014, 8:15 a.m. Pacific time

Scientific Session: Sunday, September 14, 2014, 1:15 – 2:45 p.m. PT, the Moscone Center

24 Quality of Life in Patients with Testosterone Recovery after Long Term Androgen Deprivation Therapy for High Risk Prostate Cancer

Author Block: A. Nabid[1], N. Carrier[1], A. Martin[2], J. Bahary[3], L. Souhami[4], M. Duclos[5], F. Vincent[6], S. Vass[7], B. Bahoric[8], R. Archambault[9], C. Lemaire[10], *[1]CHUS, Sherbrooke, QC, Canada, [2]CHUQ - (Hotel-Dieu de Quebec), Québec, QC, Canada, [3]CHUM, Montréal, QC, Canada, [4]McGill University, Montreal, QC, Canada, [5]Montreal General Hospital, Montreal, QC, Canada, [6]CHR Trois-Rivières, Trois-Rivières, QC, Canada, [7]Centre de Santé et Services Sociaux de Chicoutimi, Chicoutimi, QC, Canada, [8]Hôpital Général Juif de Montréal, Montréal, QC, Canada, [9]Hôpital de Gatineau, Gatineau, QC, Canada, [10]Hôpital Maisonneuve-Rosemont de Montréal, Montréal, QC, Canada*

Purpose/Objective(s): In a previous report from a randomized trial, we showed that 18 months of androgen deprivation therapy (18m ADT) appears to be equally effective as 36 months (36m ADT) in high risk prostate cancer (HRPC) patients. This current analysis was performed to evaluate quality of life (QOL) after testosterone recovery in patients treated in that multicentric randomized phase III trial (PCS IV clinical trials, Gov. # NCT 00223171).

Materials/Methods: Patients were randomized to radiotherapy (RT) plus either 36m ADT or 18m ADT. QOL was assessed by two validated tools: EORTC30 (30 items) and PR25 (25 items). The 55 items were regrouped into 21 scales. All items and scales scores were linearly transformed to a 0-100 points scale. Serum testosterone was measured at baseline then at each visit. Abnormal testosterone was defined as below the normal level. Time to testosterone recovery between arms was compared with Kaplan Meier and log rank test. All items and scales scores were analysed with general linear model and repeated measures to evaluate changes between patients who did versus those who did not recover normal levels of testosterone over time. *P*-value < 0.01 was considered statistically significant and a difference in mean scores of ≥ 10 points was considered clinically relevant. Patient-reported outcomes were filled out before treatments, every 6 months during ADT, 4 months after ADT and then once a year for 5 years. For patients who developed biochemical failure, QOL evaluation ceased at the time of a new course of ADT.

Results: 561 patients were retained for the analysis (69 patients excluded: 46 no baseline testosterone and 23 only baseline testosterone). With a median follow-up of 84 months, 283/561 (50.9%) patients recovered normal testosterone level: 161/289 (55.7%) in 18m ADT and 122/272 (44.9%) in 36m ADT, p=0.01. The median time to testosterone recovery is shorter in 18m ADT than 36m ADT: 47.2 (40.1-54.3) vs 73.2 (58.3-88.2) months, p<0.001.The global adherence to QOL questionnaires was 72.3% (10172/14062) and was similar between arms. When comparing QOL between patients who recovered with those who did not recover normal testosterone, patients with testosterone recovery had a better QOL: 26/55 items and 12/21 scales were statistically significant. Similarly, 5/26 items and 1/21 scales which reached statistical significance, were also clinically relevant.

Conclusions: In HRPC treated with RT and ADT, patients who recover a normal testosterone level have a significantly better quality of life. There is a major advantage for the use of 18m ADT vs 36m ADT since a higher proportion of patients recover a normal testosterone level in a much shorter time without apparent detriment in long term outcomes.

Source of Funding: AstraZeneca Pharmaceuticals

Author Disclosure Block: **A. Nabid:** E. Research Grant; AstraZeneca. F. Honoraria; Sanofi. I. Travel Expenses; Sanofi. **N. Carrier:** None. **A. Martin:** None. **J. Bahary:** None. **L. Souhami:** None. **M. Duclos:** None. **F. Vincent:** None. **S. Vass:** None. **B. Bahoric:** None. **R. Archambault:** None. **C. Lemaire:** None.