Survivorship – Anal Cancer

ELIGIBILITY

Anal cancer, 4 years post-treatment and NED

CONCURRENT COMPONENTS OF VISIT

SURVEILLANCE

Years 4 and up:
- Annual history and physical exam including palpation of inguinal lymph nodes and rectal exam[1]
- Colonoscopy every 5 years

Positive findings?
- Yes → Return to primary treating physician
- No → Continue survivorship monitoring

MONITORING FOR LATE EFFECTS

Assess for:
- Pain
- Fatigue
- Sacral insufficiency fractures
- Bowel problems
- Sexual dysfunction
- Neck mass
- Lymphedema
- Neuropathy
- Urinary problems

RISK REDUCTION/ EARLY DETECTION

Patient education, counseling, and screening:
- Lifestyle risk assessment[2]
- Cancer screening[3]
- Annual gynecological exam[4] to include palpation and visual inspection for patients with a vagina
- Consider annual DEXA scan for bone density monitoring:
  - For patients treated with chemoradiation to pelvis
  - For men with history of sacral insufficiency fractures
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm, Hepatitis C Virus (HCV) Screening algorithm)
- Screening for HIV as clinically indicated
  - Consider annual high-resolution anoscopy for HIV-positive/AIDS patients[5], immune suppressed patients and MSM (men who have sex with men)
- HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
- Vaccinations[6] as age appropriate

PSYCHOSOCIAL FUNCTIONING

Assess for:
- Distress management (see Distress Screening and Psychosocial Management algorithm)
- Social support: Consider participation in ostomy support group if applicable
- Body image
- Financial stressors

DISPOSITION

Refer or consult as indicated

NED = no evidence of disease
DEXA = dual energy x-ray absorptiometry

[1] Rectal exam to include digital rectal exam (DRE) and visual inspection
[2] See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
[3] Includes breast, cervical (if appropriate), colorectal, liver, lung, pancreatic, prostate and skin cancer screening
[4] Perform Pap smear/HPV test as per guidelines in Cervical Cancer Screening algorithm. For patients with abnormal Pap test or high risk HPV, colposcopy with/without Pap smear test as indicated by Gynecologist.
[5] Consider annual collection of anal cytology in HIV-positive/AIDS patients at the time of high-resolution anoscopy
[6] Based on Centers for Disease Control and Prevention (CDC) and Advisory Committee on Immunization Practices (ACIP) guidelines. Refer to recent recommendations.

Department of Clinical Effectiveness V6
Approved by The Executive Committee of the Medical Staff on 09/20/2022

SUGGESTED READINGS

Badin, S., Iqbal, A., Sikder, M., & Chang, V. T. (2008). Persistent pain in anal cancer survivors. *Journal of Cancer Survivorship*, *2*(2), 79-83. https://doi.org/10.1007/s11764-008-0051-4

Centers for Disease Control and Prevention. (2022). *Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2022*. Retrieved from https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html

Chou, R., Dana, T., Fu, R., Zakher, B., Wagner, J., Ramirez, S., … Jou, J. (2020). Screening for hepatitis C virus infection in adolescents and adults. Updated evidence report and systematic review for the US Preventive Services Task Force. *Journal of American Medical Association*, *323*(10), 976-992. https://doi.org/10.1001/jama.2019.20788

Corrigan, K.L., Rooney, M.K., De, B., Ludmir, E.D., Das, P., Smith, G.L., … Holliday, E.B. (2022). Patient-reported sexual function in long-term survivors of anal cancer treated with definitive intensity-modulated radiotherapy and concurrent chemotherapy. *Practical Radiation Oncology. Advance online publication.* doi:10.1016/j.prro.2022.05.006

Das, P., Bhatia, S., Eng, C., Ajani, J. A., Skibber, J. M., Rodriguez-Bigas, M. A., … Crane, C. H. (2007). Predictions and patterns of recurrence after definitive chemoradiation for anal cancer. *International Journal of Radiation Oncology*Biology*Physics, 68*(3), 794-800. https://doi.org/10.1016/j.ijrobp.2006.12.052

Eng, C. (2011). Carcinoma of the anal canal: Small steps in treatment advances. *Clinical Advances in Hematology & Oncology*, *9*(9), 662-669. Retrieved from https://www.hematologyandoncology.net/files/2013/09/ho0911_Eng1.pdf

Engstrom, P. F., Arnoletti, J. P., Benson, A. B., Berlin, J. D., Berry, J. M., Chen, Y. J., … Willett, C. (2010). Anal carcinoma. *Journal of the National Comprehensive Cancer Network*, *8*(1), 106-120. https://doi.org/10.6004/jnccn.2010.0007

Fakhrian, K., Sauer, T., Schuster, T., Molls, M., & Geinitz, H. (2012). Quality of life outcomes and chronic adverse events after radiotherapy in patients with anal cancer. *Conference paper: 18th Annual Congress of the German-Society-for-Radiation-Oncology in Strahlentherapie und Onkologie, 188*, 16-17. Retrieved from https://www.researchgate.net/publication/294140673_Quality_of_life_outcomes_and_chronic_adverse_events_after_radiotherapy_in_patients_with_anal_cancer

Frederick, W. A. I., Bhayani, N., Ford, D., Yang, G., & Thomas Jr., C. R. (2009). Anal carcinoma. *Current Cancer Therapy Reviews*, *5*(2), 142-150. https://doi.org/10.2174/157339409788166751

Glynne-Jones, R., Nilsson, P. J., Aschele, C., Goh, V., Peiffert, D., Cervantes, A., & Arnold, D. (2014). Anal cancer: ESMO–ESSO–ESTRO clinical practice guidelines for diagnosis, treatment and follow-up. *Radiotherapy and Oncology*, *111*(3), 330-339. https://doi.org/10.1016/j.radonc.2014.04.013

Glynne-Jones, R., Northover, J. M. A., & Cervantes, A. (2010). Anal cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Annals of Oncology*, *21*(5), v87-v92. https://doi.org/10.1093/annonc/mdq171

Holliday, E.B., Morris, V.K., Johnson, B., Eng, C., Ludmir, E.B., Das, P., … Messick, C.A. (2022). Definitive intensity-modulated chemoradiation for anal squamous cell carcinoma: Outcomes and toxicity of 428 patients treated at a single institution. *The Oncologist, 27*(1). 40-47. doi:10.1093/oncolo/oyab006

LeFevre, M. L. (2014). Screening for hepatitis B virus infection in nonpregnant adolescents and adults: US Preventive Services Task Force recommendation statement. *Annals of Internal Medicine*, *161*(1), 58-66. https://doi.org/10.7326/M14-1018

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SUGGESTED READINGS - continued

Mai, S. K., Welzel, G., Hermann, B., Bohrer, M., & Wenz, F. (2008). Long-term outcome after combined radiochemotherapy for anal cancer–retrospective analysis of efficacy, prognostic factors, and toxicity. *Onkologie*, *31*, 251-257. https://doi.org/10.1159/000121362

McCarty, H., Wong, R., Cummings, B., Gilhooly, K., & Levin, W. (2009). Dyspareunia after chemoradiation (chemo-RT) for anal carcinoma - an under reported complication [Abstract]. *Radiotherapy and Oncology, 92*(2), S20. https://doi.org/10.1016/S0167-8140(12)72450-7

Meyer, J. E., Panico, V. J., Marconato, H. M., Sherr, D. L., Christos, P., & Pirog, E. C. (2013). HIV positivity but not HPV/p16 status is associated with higher recurrence rate in anal cancer. *Journal of Gastrointestinal Cancer*, *44*(4), 450-455. https://doi.org/10.1007/s12029-013-9543-1

National Comprehensive Cancer Network. (2022). *Anal Carcinoma* (NCCN Guideline Version 1.2022). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/anal.pdf

Oblak, I., Petric, P., Anderluh, F., Velenik, V., & Fras, P. (2012). Long term outcome after combined modality treatment for anal cancer. *Radiology and Oncology*, *46*(2), 145-152. https://doi.org/10.2478/v10019-012-0022-2

Philip, E. J., Nelson, C., Temple, L., Carter, J., Schover, L., Jennings, S., … DuHamel, K. (2013). Psychological correlates of sexual dysfunction in female rectal and anal cancer survivors: Analysis of baseline intervention data. *The Journal of Sexual Medicine*, *10*(10), 2539-2548. https://doi.org/10.1111/jsm.12152

Tomaszewski, J. M., Link, E., Leong, T., Heriot, A., Vazquez, M., Chander, S., … Ngan, S. (2012). Twenty-five-year experience with radical chemoradiation for anal cancer. *International Journal of Radiation Oncology*Biology*Physics*, *83*(2), 552-558. https://doi.org/10.1016/j.ijrobp.2011.07.007

US Preventative Services Task Force. (2019). Screening for HIV infection. US Preventive Services Task Force recommendation statement. *Journal of American Medical Association*, *321*(23), 2326-2336. https://doi.org/10.1001/jama.2019.6587

Young, S. C., Solomon, M. J., Hruby, G., & Frizelle, F. A. (2009). Review of 120 anal cancer patients. *Colorectal Disease*, *11*(9), 909-914. https://doi.org/10.1111/j.1463-1318.2008.01723.x

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