of oropharynx cancer, Worden et al. (44) provided all patients with chemotherapy. Then, the investigators waited 3 weeks, after which the patients were taken back to the operating room for a direct laryngoscopy to assess the amount of tumor shrinkage, that is, to determine objective response (45). If there was over 50% response (extensive reduction in tumor size), then patients received chemotherapy plus radiation. But if the response was only 50% or less, patients were not given further chemotherapy, but instead received surgery plus radiation. Worden et al. (46) provide a detailed schema of their clinical trial. In a study of cancer of the larynx, Pointreau et al. (47) treated all patients with docetaxel, cisplatin, and 5-fluorouracil, followed by assessing response. Responders were treated with radiation (no surgery), and nonresponders were treated with surgery. The term response refers to objective response (size and number of tumors) as measured by a set of standard criteria, such as the RECIST criteria.

e. Improving Ability of Patient to Tolerate Chemotherapy

Still another advantage of neoadjuvant therapy over adjuvant therapy, is that the patient may have a greater tolerance to the toxic effects of chemotherapy (48). In contrast, in the case of gastric cancer, for example, chemotherapy taking place immediately after surgery may result in an increase in surgery-related adverse effects (49). Adjuvant chemotherapy may not be possible if attempted after surgery, because the adjuvant chemotherapy may need to be interrupted or delayed due to slow recovery from surgery (50).

II. ADVANTAGES OF ADJUVANT THERAPY

The advantages of adjuvant therapy over neoadjuvant therapy include the following.

a. Immediate Surgery and Reduced Risk of Metastasis

An advantage of adjuvant therapy is that there is no delay until surgery (51). Immediate surgery for bladder cancer, for example, will minimize the risk of metastasis during the

[44]Worden FP, Kumar B, Lee JS, et al. Chemoselection as a strategy for organ preservation in advanced oropharynx cancer: response and survival positively associated with HPV16 copy number. J. Clin. Oncol. 2008;26:3138–46.

[45]Worden FP. E-mail of September 8, 2010.

[46]Worden FP, Kumar B, Lee JS, et al. Chemoselection as a strategy for organ preservation in advanced oropharynx cancer: response and survival positively associated with HPV16 copy number. J. Clin. Oncol. 2008;26:3138–46.

[47]Pointreau Y, Garaud P, Chapet S, et al. Randomized trial of induction chemotherapy with cisplatin and 5-fluorouracil with or without docetaxel for larynx preservation. J. Natl Cancer Inst. 2009;101:498–506.

[48]D'Auria G, Ciprotti M, Conte D, et al. Neo-adjuvant and adjuvant chemotherapy in bladder cancer. Ann. Oncol. 2007;18(Suppl. 6):vi162–3.

[49]De Vita F, Giuliani F, Galizia G, et al. Neo-adjuvant and adjuvant chemotherapy of gastric cancer. Ann. Oncol. 2007;18(Suppl. 6):vi120–3.

[50]Teply BA, Kim JJ. Systemic therapy for bladder cancer—a medical oncologist's perspective. J. Solid Tumors 2014;4:25–35.

[51]D'Auria G, Ciprotti M, Conte D, et al. Neo-adjuvant and adjuvant chemotherapy in bladder cancer. Ann. Oncol. 2007;18(Suppl. 6):vi162–3.