(4) Medical Equipment Evaluation. This programme's aims are to establish and promote international protocols and standards for Performance Testing, Quality Assurance, Safety and Environmental aspects.

22.
CURRENT STATUS OF SYSTEMATIC RADIOPHARMACEUTICALS FOR THE TREATMENT OF PAINFUL METASTATIC BONR DISEASE

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Intractable bone pain secondary to bone metastasis from prostate or breast cancer, or other malignancies is a major problem in the management of the oncological patient. Treatment often includes the use of analgesic drug therapy; however, radiation therapy, hormonal therapy, chemotherapy, and surgery may also be needed. Advances in systemic radionuclide therapy have increased the number of treatment options available for patients with painful osseous metastases. This treatment modality offers three major advantages i.) by addressing all sites of involvement; and ii) by limiting irradiation of normal tissues due to selective absorption into bone which results in an improved therapeutic ratio. Patients with a positive bone scan are eligible for treatment, and indications and contraindications for use are well defined. Large, prospectively randomized clinical trials have established the efficacy of samarium-153 EDTMP and strontium-89 Cl as a first-line therapy. When these agents are used, pain relief often occurs rapidly and lasts several weeks to months with responses seen in 60-80% of patients, depending on the extent and stage of the disease. With the introduction of modern bone-seeking radiopharmaceuticals as Sm-153 EDTMP toxicity is rare and restricted to reversible myelosuppression. In summary, evidenced based literature suggests that these radiopharmaceuticals can significantly reduce pain and analgesic requirements, improve quality of life, reduce lifetime radiotherapy requirements and management costs, and may even slow the progression of painful metastatic lesions. Retreatment is safe and effective.

23.
PRINCIPLES OF RADIOIODINE TREATMENT (^{131} I) FOR PATIENTS WITH DIFFERENTIATED THYROID CARCINOMAS

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The aims of radioiodine (^{131} I) therapy for patients with differentiated thyroid carcinomas:

- Destruction of thyroid tissue remaining after thyroidectomy
- Destruction of microcarcinoma focus in site of thyroid
- Destruction of metastases in lymph nodes
- Destruction of distant metastases

Therapeutic indications for radioiodine (^{131} I) treatment in differentiated thyroid carcinomas

- **Complementary treatment**

This treatment is recommended in all patients with follicular or papillary carcinomas in stage pT_{1b-4} N_{0-1} M_0 after total thyroidectomy. In some cases it could be as the complementary treatment after incomplete thyroidectomy.
The recommended radioiodine activity for the complementary therapy is from 1.75 to 3.5 GBq (60 – 150 mCi)

- **Radical treatment**

This kind of treatment is recommended for patients with differentiated thyroid carcinomas and remote metastases. If the lesions concentrate ^{131} I in quantities sufficient for radical treatment - the patient can be treated with the isotope.

- **Palliative treatment**

Palliative treatment is recommended for patients with inoperable thyroid carcinoma or with local recurrence, or with remote metastases concentrating radioiodine in quantities non sufficient for radical treatment.

Contraindications for radioiodine (^{131} I) treatment

- Pregnancy
- Breast-feeding

The contraception for women is necessary during 12 months after radioiodine treatment. For men the 4 – 6 months contraception is recommended.

Method of radioiodine (^{131} I) administration

- Patient serum TSH concentration should be above 30 uIU/ml