Therefore, we investigated the effect of radiotherapy on Ledderhose disease.

Material and Methods: Between 2008 and 2014, 37 patients (56 feet) with Ledderhose disease were treated with radiotherapy at our department (figure 1). Radiation treatment consisted of 30 Gy given in 10 fractions (orthovoltage 200 kV or electrons 6-10 MeV). After the first 5 fractions, a 8-10 week split was included. After this split, the remaining 5 fractions were given. Progressive disease (PD) was defined as progression of complaints. Stable disease (SD) was defined as no improvement or progression of complaints. Partial response (PR) was defined as improvement or no complaints, but still nodules were present. Complete response (CR) was defined as no complaints and no nodules present.

Results: All patients completed the planned treatment. The mean follow-up time was 25 months (range 3 to 46 months). Mean age of patients was 53 years, 46% were men, 54% were women. In 51% of patients (n=19), both feet were affected. After the radiotherapy, a minority of the patients complained of rash or dry skin, which resolved spontaneously. Of the 56 feet treated, 5% had PD, 23% had SD, 64% had PR and 7% had CR. No radiation induced malignancies were seen. Of the two patients with PD, one patient had previous surgery for Ledderhose disease and the other patient had PD disease after an initial PR.

Conclusion: Radiotherapy is an effective treatment for Ledderhose disease. However, the National Health Care Institute of the Netherlands does not support radiotherapy for Ledderhose disease as no randomized controlled trial have investigated the efficacy of radiotherapy. Therefore, we will present a double blind randomized multicentre phase three study to confirm the current results prospectively.

EP-1472
Role of SBRT with VMAT-FFF for abdomino-pelvic lymph node metastases in oligometastatic patients
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Purpose or Objective: Nowadays stereotactic body radiotherapy (SBRT) is considered a safe and effective approach for several sites of metastatic disease. So far, few published data exist on local control rates of radiotherapy in the context of isolated or limited lymph node metastases. We analyzed the dosimetric and clinical results of oligometastatic patients treated with SBRT for isolated lymph node metastases in abdomen and/or pelvis.

Material and Methods: In the analysis we included patients with a maximum of 3 lymph node sites of disease with diameter less than 5 cm, located in the abdomen or pelvis. Radiotherapy was administered with Volumetric Modulated Arc Therapy Rapid-Arc (VMAT-RA) and flattening filter-free (FFF) beams; prescribed dose was 45 Gy in 6 fractions of 7.5 Gy each. We analyzed dosimetric data and correlated them with acute toxicity (CTCAE 3.0), local and distant control of disease, progression free survival and overall survival.

Results: From January 2006 to May 2015, we treated 97 patients with lymph node metastases, of which 26 were lost at follow-up. We analyzed then 71 patients with a total of 79 treated lesions, with a mean follow-up of 1.44 years (range 0.14 – 6.21 years). At revaluation, complete response was achieved in 39 (49.3%) lesions and partial response in 28 (35.4%) lesions. Stable disease was demonstrated in 10 (12.6%) cases while only 2 (2.5%) lesions showed progression of disease. The overall clinical benefit rate was 97.5% (77/79 lesions). Acute toxicity was mild: 10 (14%) patients reported G1 toxicity (notably nausea and fatigue); 2 (2.8%) patients reported G2 toxicity (nausea and diarrhea). No Grade 3 and 4 toxicities were reported. In-field progression of disease during follow-up was demonstrated in 18 sites (22.7%) with a median time of 10.7 months. Out-field lymph node progression was demonstrated in 22 (27.8%) cases while distant metastases occurred in 25 (31.6%) cases. Local control rate and overall survival rate at 1 year were 83% and 93%, respectively.

Conclusion: In consideration of our dosimetric and clinical results, SBRT with VMAT-RA and FFF beams can be considered a safe and effective approach in oligometastatic patients with abdomino-pelvic isolated lymph node metastases. Although this can be considered an initial experience, these results may be potentially significant for preserving quality of life of patients and delaying further systemic treatments.

EP-1473
The clinical study on oligometastases from different tumors treated with carbon ions
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Purpose or Objective: The purpose of this study was to evaluate the efficacy and feasibility of carbon ion
radiotherapy (CIRT) for Oligo-metastatic tumors located different organ from various cancer.

**Material and Methods:** From December 2009 to June 2013, 17 patients joined into the clinical study as volunteers. The patients were not surgical candidates for medical reasons or patient refusal. The Oligometastases located in lung, brain and liver respectively from various cancer were treated with CIRT. The heavy ion beams energy was 230–350 MeV/u and the RBE value was 2.5. A median dose of 60 GyE (range, 20–66 GyE) was delivered to the planning target volume (PTV) in 4–12 fractions with a median daily dose of 5 GyE (range, 4.68–5.5 GyE). Short-term effect was evaluated by tumor change in three months after treatment. CIRT treatment complications were acute skin reaction and self-limited, without any grade 4-5 toxicity.

**Conclusion:** Compared with Conventional radiotherapy, CIRT has short treatment time, high Biological effect advantages. CIRT may be one of effective, the least invasive and safe approach to patients with Oligometastases.

**EP-1474**

The preliminarily results of carbon ion radiotherapy in 60 patients X. Wang1, Q. Zhang1, H. Zhang1, L. Gao1, J. Ran1, Q. Li2, R. Liu3, S. Wei, H. Luo4, X. Wei5, Z. Liu5, S. Sun5, L. Xu5 1Gansu Cancer Hospital, Department of Radiotherapy, Lanzhou, China 2Chinese Academy of Sciences, Institute of Modern Physics, Lanzhou, China

**Purpose or Objective:** This study summarizes the experience with carbon ion radiation therapy (RT) at the Heavy ion Research Facility in Lanzhou since 2009.

**Material and Methods:** From December 2009 to June 2013, 60 patients joined into the clinical study as volunteers. 14 patients with brain tumor (cerebral glioma (n=6), metastatic brain tumor (n=8)), 8 patients with head and neck tumor, 15 patients with chest tumor (primary lung cancer (n=8), metastatic mediastinal carcinoma (n=1)), metastatic lung cancer (n=4), 13 patients with abdominal carcinoma (primary liver cancer (n=4), pancreatic cancer (n=1), abdominal soft tissue malignant tumor (n=1), metastatic liver cancer (n=4)), 13 patients with abdominal lymph node metastasis carcinoma (n=1), 5 patients with pelvic tumor (rectal cancer (n=1), anal cancer (n=1), ovarian carcinoma (n=1), chordoma (n=1), soft tissue tumor (n=1)), 5 patients with limbs tumor (skin cancer (n=2), soft tissue malignant tumor (n=3)), were treated with carbon ions beams. The beams energy was 230–350 MeV/u and the RBE value was 2.5. A median dose of 60 GyE (range, 20–66 GyE) was delivered to the planning target volume (PTV) in 4–12 fractions with a median daily dose of 5 GyE (range, 4.68–5.5 GyE). Short-term effect was evaluated by tumor change in three months after treatment. CIRT treatment complications were acute skin reaction and self-limited, without any grade 4-5 toxicity.

**Conclusion:** Compared with Conventional radiotherapy, CIRT has short treatment time, high Biological effect advantages. CIRT may be one of effective, the least invasive and safe approach to patients with Oligometastases.