

Background: We evaluated, if preoperative, single-dose steroid application reduces nausea, pain and voice disturbances after thyroid surgery.

Patients and methods: Sixty patients ($m=16$, $w=44$) with median age 55 years (range 18–80) entered a two-arm, randomized, double-blinded, controlled study receiving either dexamethasone 8mg (D) ($n=30$) or NaCl 0.9% (C) ($n=30$) i/v 30 min before anaesthesia. At 6 timepoints (4–48 h) after the operation nausea (verbal response scale (0–3), use of antiemetic medication), pain (visual analogue scale (VAS), analgesic use) and vocal function was registered.

Results: Groups did not differ in demographics. Nausea and antiemetic use was significantly less in group D compared to C. Over 48 h the difference in nausea and vomiting was significant ($p<0.001$; ANOVA repeated measures). There was a significant reduction in antiemetic use, too (D=16.1%/C=28.1%) ($p<0.009$). Mean scores for pain during the first 48 h after operation were 17.5/25.1 in group D and C, respectively ($p<0.001$) with a reduction in total opioid requirement ($p<0.001$). Changes in voice mean frequency over a 48 h period after surgery was significantly less in the dexamethasone group than in the placebo group ($p<0.02$). No potential steroid related complications occurred.

Conclusion: Preoperative single-dose steroid not only reduces postoperative nausea/vomiting and pain within 48 h after thyroid resection but decreases voice dysfunction, too.

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IN VITRO EVALUATION OF PROTEASOME INHIBITON BY BORTEZOMIB AS A NEW OPTION OF ANTIPROLIFERATIVE THERAPY IN ANAPLASTIC THYROID CANCER

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Background: Anaplastic thyroid cancer (ATC) is characterized by uncontrolled tumor cell proliferation. Because of failure of usual therapy, patients with undifferentiated thyroid cancer are in desperate need of new therapeutic strategies. Bortezomib is an inhibitor of the proteasome that has been approved for the treatment of multiple myeloma. The aim of this study was to evaluate the effect of Bortezomib alone and in combinations on anaplastic thyroid cancer cell lines as a possible new therapeutic option for ATC.

Patients and methods: Three anaplastic thyroid cancer cell lines (Hth74, C643, KAT4) were evaluated in vitro. The antiproliferative effect of Bortezomib (0.1–100 nM) alone, or in combination with valproic acid (0.125–4 mM) or AEE788, a dual tyrosine kinase inhibitor (TKI) of EGF-R/VEGF-R, (AEE788 4 μ M) on thyroid cancer cell lines was quantified by MTT assay. The proapoptotic effect was assessed by flowcytometric analysis (FACS) after PI staining and cell cycle analysis. Single and combination therapy of compounds were analyzed.

Results: Administration of Bortezomib (B) and valproic acid (V) inhibited tumor cell numbers as follows: 92% inhibition in Hth74

(B) 87,5%(V), 98% in C643(B) 44%(V) and 98% in KAT4(B) 50%(V). The IC_{50} of Bortezomib was 8 nM in Hth74, 10 nM in C643 and 10 nM in Hth74. Combinations of IC_{50} concentrations of Bortezomib with valproic acid or AEE788 displayed relevant synergistic effects with an increased antiproliferative activity of up to 100% compared to the single agents. An increase of apoptotic cells of some 10–15% occurred by AEE788 and not by Bortezomib or valproic acid administration.

Conclusion: Proteasome inhibitor leads to significant decreased tumor cell proliferation of anaplastic thyroid cancer cell lines in vitro. Combination of Bortezomib with TKI of EGF-R/VEGF-R or with valproic acid seems to be more effective than single agent strategies. It is suggested that proteasome inhibitor may have therapeutic potential in some anaplastic thyroid cancers.

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MORBIDITY OF SECONDARY COMPLETE THYROID RESECTION IN PATIENTS WITH DIFFERENTIATED THYROID CARCINOMA DEPENDS ON THE TIME OF SURGERY

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Background: Secondary complete thyroidectomy (and lymph node dissection) in patients with differentiated thyroid carcinoma are associated with high morbidity and complication rates. However, the optimal time of surgery is discussed controversially. In the present study we evaluated patient outcome depending on the time of secondary surgery.

Patients and methods: Between 1996 and 2004 87 patients with differentiated thyroid carcinomas (PTC:58, FTC: 29) underwent secondary completion of surgery at the University of Regensburg Medical Center. These patients were divided in three groups depending on the time between initial and secondary surgery: group A: 0–3 days and >3 months, group B: 3–7 days and 7 weeks–3 months, group C: 1–7 weeks. The median follow-up time was 60.5 months.

Results: Operation procedures were comparable in all groups. There was a significant lower number of persistent hypocalcemia in group A compared with group B and C ($p<0.042$). Moreover, recurrent laryngeal nerve paresis was significantly decreased in group A ($p<0.003$). Five patients developed local recurrence (5.7%). Overall mortality rate was 5.7%.

Conclusion: Our data suggest that completion of surgery in patients with differentiated thyroid carcinoma within 3 days or more than 3 months after initial surgery reduces morbidity and improves patient outcome.

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RECURRENT GOITER—THE BOOMERANG OF INITIAL SURGERY

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Background: Recurrent goiter is a common problem after partial thyroid resection at the initial operation. Reoperations result in harbouring an increased morbidity with a 5–10 fold risk for recurrent laryngeal nerve palsy and hypoparathyroidism. The objective of this study is to analyze the sequelae of patients (pts) reoperated for benign recurrent disease.

Patients and methods: Prospective analysis of all cases undergoing thyroid gland surgery at our institution (1997–2006). Pts operated for recurrent goiter were identified and evaluated with regard to number/type of primary operations, time/localization of recurrence, type of reoperation and incidence of newly diagnosed thyroid malignancy.

Results: Between 1997 and 2006 105 (8.5%) of overall 1,241 pts underwent reoperation for recurrent goiter. In 94 of these 105 cases a complete follow-up was obtained, including 112 “initial” operations. In 84% the primary operation was a partial resection, in 16% a radical unilateral resection. No patient underwent total thyroidectomy. The median time to reoperation was 22 years (range 1–63 years). Ipsilateral recurrence occurred after median 27 years, contralateral after median 19 years. However, in 70% recurrence occurred at the side initially already operated on. In 96% of the pts with recurrent disease a radical resection was performed. Scarily in 14 of the 94 pts (14.9%) a newly detected thyroid cancer was diagnosed at reoperation.

Conclusion: Patients with only partial initial resection of benign goiter disease were brought to reoperation after median 22 years. 70% of the recurrences occurred on the same side as the previous operation. A newly detected thyroid cancer was diagnosed during reoperation in 14.9%. Our data strengthen the evidence that in an endemic region initial radical thyroid resection reduces overall morbidity in preventing recurrences and therefore avoiding reoperations with increased morbidity and further decreases the incidence of thyroid cancer.

15 PERSISTING AND RECURRENT MEDULLARY THYROID CARCINOMA

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Background: A wide variety in the natural course of MTC not cured by first operation is followed by a variety of consequent reoperations, with questionable curative intention.

Patients and methods: Data of all patients with MTC from 1986 to 2006 were documented prospectively, with consequent follow-up, including the markers Calcitonin and CEA, from 6 to 306 months. Reoperations were performed diagnostic or therapeutic, curative or palliative.

Results: Out of 168 patients operated on for MTC (120 spor., 48 fam.) 26 underwent 1–8 reoperations, ranging from selective extirpation of lymph nodes to radical dissection of all compartments (including transsternal) and, with respect to the liver, ranging from diagnostic laparoscopy up to intended liver

transplantation. The clinical course can be characterised as 2 types with 2 subtypes: (a) 1. biochemical cure ($n=5$); 2. stable (occult) disease or slow progression ($n=7$); (b) 1. rather rapid, clinical progression ($n=7$); 2. tumour-related death ($n=5$) (missing data in 2 patients). Liver metastases do not exclude type (a) 2.

Conclusion: Multiple radical reinterventions are of questionable value, but for patients with inadequate first operation. On the other hand, targeted operations in order of long-time control of locoregional disease are indicated and, sometimes, can be followed by definite cure.

16 THE EVALUATION OF INTRAOPERATIVE NEUROMONITORING IN REOPERATIVE THYROID SURGERY

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Background: Reoperation in recurrent goiter shows an elevated morbidity, especially an increase in recurrent laryngeal nerve palsy between 2 and >20%. The benefit of intraoperative neuromonitoring (IONM) in reoperative surgery with relation to the recurrent laryngeal nerve palsy rate isn't shown clearly.

Patients and methods: In our retrospective study (1995–2005) of 430 nerves at risk (NAR) in reoperative thyroid surgery by using neuromonitoring (223 NAR) or only visual nerve identification (207 NAR) we had the same transient recurrent laryngeal nerve palsy rate (11.5 and 12%). But we find a clear reduction in permanent recurrent laryngeal nerve palsy by using neuromonitoring from 11.2 to 4.3%.

After standardizing IONM in our clinic we started a prospective study to check this result and to find out the influence of IONM on the transient recurrent laryngeal nerve palsy rate. We analysed the reoperations in thyroid diseases by using neuromonitoring (52 NAR) from 2006 (January 1) in relation to the transient and permanent recurrent laryngeal nerve paralysis rate.

Results: The prospective evaluation of 52 NAR in reoperative thyroid surgery shows a decreased transient (8.16%) and permanent (2.04%) recurrent laryngeal nerve palsy rate by using IONM.

Conclusion: In reoperative thyroid surgery IONM decreases the transient and permanent recurrent laryngeal nerve palsy rate.

17 REOPERATIONS IN THE CENTRAL NECK FOR RECURRENT PAPILLARY THYROID CARCINOMA

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Background: A retrospective review of patients with recurrent PTC, who underwent reoperation in the central compartment was performed to analyze the risk of hypoparathyroidism and Recurrent Laryngeal Nerve injury.