stream intracellular signaling cascades. This mechanism includes the mitogen-activated protein kinases, which can lead to increased transcriptional activation of genes related to cell proliferation, apoptosis and inflammation.
Objectives: To quantify and to compare the expression of ERK2 and p38α in pleural mesotelial cells (PMC) exposed to crocidolite or chrysotile fibers.
Material and methods: C57/Bl6 mice received intrapleural injection of crocidolite or chrysotile fibers (3.0 ug/cm^2) or PBS (control). After 1, 7, 14 and 30 days the animals were euthanized and PMC were extracted. ERK2 and p38α levels were measured by ELISA. Results are expressed in mean ± SD using t-test ($p < 0.05$).
Results: In the control group ERK2 and p38α levels were undetectable. Both crodidolite and chrysotile stimulated PMC to produce kinases, as shown in the table.

	ERK2		p38α	
	Crocidolite	Chrysotile	Crocidolite	Chrysotile
1 day	234.8±77.3	211.8±86.8	397.1±123.1	218.6±58.9*
7 days	1,604.2±596.5	639.6±346.0*	527.8±98.8	399.2±62.8*
14 days	6,070.0±1,104.7	3,117.7±1,325.2*	1,841.1±483.6	1,001.8±157.4*
30 days	9,292.7±898.8	5,915.7±1,606.7*	2,595.9±542.3	1,378.7±377.1

*$p<0.05$ when crocidolite × chrysotile were compared.

Conclusions: Our data demonstrated that crocidolite produced higher levels of ERK2 and p38α than chrysotile, in a time-dependent fashion. More studies are needed to examine whether activation of this pathway is functionally linked to cell inflammation and cellular apoptosis induced by asbestos fibers and its role in the carcinogenesis of mesothelioma.

P3544
Prognostic value of promoter hypermethylation of tumor suppressor genes in malignant pleural fluid
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Background: To determine the prognostic value of promoter hypermethylation of p16/INK4a, MGMT, BRCA1 and RAR β genes in pleural fluid (PF) and other clinicopathological parameters in malignant pleural effusion (MPE).
Methods: We evaluated 49 patients.We recorded clinical characteristics, characteristics of the PF, the detection of promotor hypermethylation of the tumor suppressor genes in PF by methylation-specific polymerase chain reaction.
Results: We inclued 37 (75.5%) lung cancer patients and 12 (24.6%) with others epithelial neoplasias.The median time of global survival was of 255.5 (IC 95%:56-488.5) days.Parameters associated with a minor survival were: the presence of others metastasis (p=0.003); no chemotherapy treatment (p=0.001); pH<7.28 (p=0.004); glucose<60 (p=0.002) and the absence of some methylated gene (p=0.003).After the multivariate analysis, chemotherapy treated have a significantly reduced risk of death (OR=0.05;p = 0.001).Patients with metastasis (OR = 5.1;p=0,001) and patients with pH <7.28 (OR=3.2;p=0.03) have more risk of death.Chemotherapy treatment received (OR=0.1;p=0.001) and the presence of methylated genes (OR=0.2;p=0.02) were factors associated with major survival in patients with lung adenocarcinoma diagnosis.
Conclusions: In patients with lung adenocarcinoma, the presence of promotor hypermethilation of genes and history of chemotherapy treatment were significantly associated with major survival.Tumor extension, not having received chemotherapy and the caracteristics of the PF were factors related to the risk of death in all MPE patients analyzed.
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391. Molecular markers: diagnosis and management of malignant pleural effusions

P3543
Expression of ERK2 and p38α kinases in pleural mesothelial cells after exposure to asbestos fibers
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Asbestos is known to stimulate gene expression in a variety of cell types via down-

P3545
Endogenous thrombin potential (ETP) in pleural effusions
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The coagulation system plays an important role in the physiopathological mechanisms of inflammatory diseases compromising the pleural space. Endogenous thrombin potential (ETP) is a new marker used to evaluate coagulation system that recording hypercoagulability, as well as, hypocoagulability and reflects quantitatively the measure of generated thrombin.
Objetive: To evaluate the ETP in pleural effusions of different etiologies.
Methods: Thirty seven patients with pleural effusion were enrolled, previous to any treatment: 10 Lung cancer (LC), 6 breast cancer (BC), 11 tuberculosis (TB) and 10 transudates (TD). ETP in plasma (P) and pleural fluid (PF) were quantified by using the BCS system (Siemens, Germany). The results (mA) were calculated by mathematical derivation from the kinetic reaction developed where

ETP is expressed by the area under the curve (AUC). Statistical analysis: One Way Anova.
Results: In plasma, the ETP levels were lower in the TD group. In pleural fluid, the higher levels were observed in the BC group. However, considering the pleural effusions altogether, no statistical differences were observed between transudates and exudates.

ETP levels in plasma and pleural fluid

	LC	BC	TB	TD	p
P	407.4±18.8	425.4±54.1	350.9±38.5	285.7±27.8*	0.009
PF	75.6±27.2	249.1±78.3*	123.5±55.6	77.7±19.9	0.006

*p<0.05.

Conclusion: This preliminary result shows that ETP may be useful to characterize the fibrinolytic response of the pleural space in inflammatory conditions. A greater number of malignant and infectious exudates need to be studied to better understanding the real usefulness of ETP in the mechanism of pleural effusion formation, as well as, the management of therapeutic approach.
Support: CNPq, FAPESP

P3546
Diagnostic and prognostic significance of survivin levels in malignant pleural effusion
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We aimed to evaluate the diagnostic and prognostic value of measuring survivin levels which is an inhibitor of apoptosis in pleural effusions.
Methods: Group I, malignant (MPE) (n=53); Grup II, tuberculosis (TPE) (n=18); Group III transudative (TE) (n=9) effusions were enrolled prospectively. We used ELISA to analyze 80 effusions for survivin. The accuracy of diagnosis and the correlation between survivin and survival in MPE were analyzed.
Results: Survivin level was 40.32±75.06 in MPE, 15.83±10.92 in TPE and 8.33±8.67 in TE. According to survivin level there was no istatistical significant difference between study groups. (p=0.182). When the patients divided two group as malignant and non-malignant pleural effusion, survivin level was significantly higher in MPE (40.32±75.06) than in non-MPE (13.33±2.05) (p=0.011). The cut-off value for survivin levels detected by ROC curve analysis was 7.5 pg/ml, with sensitivity and specifity values of%72,%44, respectively. There was no correlation between survivin level and age, sex, location, fluid pH, glucose, protein, albumine and ADA level while there was significant correlation with fluid LDH. (r=0.045; p<0.001). No correlation between survivin levels and survival were detected in MPE.
In conclusion, survivin expression levels detected with ELISA can be usefull for the differential diagnosis of MPE and non-MPE despite TPE can cause false positive results in high prevalent countries. Specifity and sensitivity results could be better when cases of tuberculosis has been ruled out. Further studies are needed which included larger group of patients with other exudative effusions.

P3547
The value of mesothelin in pleural effusion vs histology by medical thoracoscopy
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Pleural effusions (PE) are frequently the presenting symptom of neoplastic disease. Serum mesothelin related peptide (SMRP) is a new biomarker for the diagnosis of mesothelioma. The aim of this study was to investigate the diagnostic significance of mesothelin in PE of unknown origin.
Pleural fluid, obtained from 104 patients between March 2008 and October 2009, were compared with histology of pleural biopsy taken during consecutive medical thoracoscopy. We had: 34 PE from mesotheliomas (25 epitheliomorphic, 9 sarcomatoid), 35 from pleural metastasis, 35 from benign diseases. SMRP concentrations was obtained using an ELISA test. SMRP levels in PE were significantly higher in patients with epitheliomorphic mesothelioma (mean ±SD, 46,55 nM ± 44,29) than in patients with sarcomatoid mesothelioma (16.11 nM± 25.02) (p=0.061), pleural metastasis (7.52 nM± 10.77) (p<0.0001), benign diseases (5,82 nM± 8,86) (p<0.0001) and in patients with malignant diseases (22.78 nM± 34.02) (p<0.005) than benign diseases. Using ROC curve analysis, pleural fluid SMRP offered an AUC of 0.767 in its ability to differentiate between mesothelioma and all other diagnosis at a cutoff value of 19.6 nM. The diagnostic sensitivity and specificity of pleural fluid SMPR concetration for distinguishing mesothelioma from other causes of PE, at 19.6 nM, were 58.8% and 97.1%, respectively.
Pleural SMRP levels higher than 19.6 nM were observed in 18/25 (72%) patients with epiteliomorphic mesothelioma, in 5/35 (14.3%) with pleural metastasis, in 2/9 (22.2%) with sarcomatoid mesothelioma, 1/35 (2.9%) with benign diseases. SMRP has the potential to add clinically significant information in the work-up of patients with a PE of unknown origin.

P3548
Pleural fluid proGRP in the diagnosis of neuroendocrine – Related lung carcinomas
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Pro-gastrin-releasing peptide (ProGRP) is a neuropeptide associated with tumors of neuroendocrine lineage which has been used to differentiate small cells from non small cells lung carcinomas.
Objective: To evaluate the ProGRP in pleural fluid (PF) of patients with malignant pleural effusion (MPE).
Methods: ProGRP was quantified by chemiluminescence immunoassay with microparticles (CMIA, Architect, Abbott) in PF (collected in EDTA tubes) from 49 patients with MPE (45) and benign effusions (4). Malignant samples corresponded to pleural metastasis of: neuroendocrine lung carcinoma (3), breast (7), lung adenocarcinoma (20), lung poorly differentiated carcinoma (4), bronchioloalveolar adenocarcinoma (1), and others (10). Benign cases corresponded to parapneumonic (3) and lupus-related effusions (1).
Results: Considering 4 levels, we obtained: 0 to 46 pg/mL: 37 (75%); 47 to 100 pg/mL: 4 (8.2%); 101 to 200 pg/mL: 2 (4.1%) and > 200 pg/mL: 6 (12.2%) of cases. The benign cases and most of the metastatic effusions were in level 1. All cases in level 2 corresponded to lung adenocarcinoma. In level 3, one case corresponded to a poorly differentiated lung carcinoma and one to bronchioloalveolar adenocarcinoma. In level 4, two cases were poorly differentiated lung adenocarcinoma, and one was a sarcoma of the omentum with pleural metastasis; the remaining 3 cases corresponded to tumors of neuroendocrine lineage. In these cases, the concentration of ProGRP was higher than 30,000 pg/mL.
Conclusion: PF ProGRP can be useful in identifying pleural metastasis of undifferentiated tumors. Although a greater number of cases should be studied, it seems unequivocal its importance in recognizing neuroendocrine lineage tumors.

P3549
Expression of matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) in pleural effusions
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Metalloproteinases represent a group of proteolytic enzymes responsible for cleaving of the extracellular matrix. Its activity is controlled by specific tissue inhibitors. MMPs can be altered in inflammatory and malignant processes.
Objective: To evaluate the expression of MMPs and TIMPs and their correlation with inflammatory and fibrosis markers in pleural effusion of different etiologies.
Methods: Eighty-two patients with pleural effusion were included: 30 tuberculosis (Tb), 25 malignant (Ca) and 25 transudates (Trans). Pleural fluid levels of MMPs (1, 2, 8 and 9), TIMPs (1 and 2), VEGF, IL-6 and TGF-β1 were quantified by ELISA. Statistical analysis: One Way Anova and Spearman's correlation.
Results: Except MMP-1 and TIMP-2, all parameters were higher in exsudates than transudates. MMP-8, MMP-9 and IL-6 levels were higher in Tb than Ca or Trans. The better correlation between MMPs and cytokines were observed in Tb group (MMP-9 x TGF-β1 and MMP-9 x VEGF).

MMPs, TIMPs and cytokines in pleural effusion

Parameters	Tb	Ca	Trans	p
MMP-1	483±180	327±178	84±16	0,514
MMP-2	271±74*	156±10	166±10	0,009
MMP-8	2037±388*#	1026±289*	109±22	<0,001
MMP-9	1129±201*#	600±144*	79±17	<0,001
TIMP-1	1903±64*	1856±40*	720±21	<0,001
TIMP-2	227±8	232±9	229±8	0,918
IL-6	6886±708*#	3213±524*	840±105	<0,001
VEGF	1891±269*	1954±242*	330±40	<0,001
TGF-β1	986±108*	1418±178*	208±32	<0,001

p<0.05: *compared with Trans; #compared with Ca

Conclusions: Most of the MMPs and TIMP-1 seems to be involved in the pathogenesis of tuberculous and malignant pleural effusion. The correlation between MMP-9 and TGF β1 could be related to the pleural thickness observed in some cases of tuberculosis.

P3550

Diagnostic yield of cytology in malignant pleural effusion: Impact of volume and repeated thoracentesis

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Pleural effusions are a common finding in patients with cancer,and the diagnosis is important in view of prognosis and management.We conducted this study to determine the sensitivity of pleural fluid cytology and also to check the minimum volume required for best diagnostic yield of cytology and the effect of repeated thoracentesis on the results.

Methods: This prospective - descriptive study in patients with exudative pleural effusion during a period of 24 months (from September 2007 to August 2009) had been admitted in massih-daneshvari hospital in Tehran-Iran.The patients underwent thoracentesis and pleural fluid cytology and subsequently followed up for six months. Diagnostic value of cytology in general and also of different volume of pleural fluid and impact of repeated thoracentesis were investigated.

Results: A total of 318 patients were studied. Sensitivity of cytology for diagnosis of pleural malignancy was 40.8% (p=0.004). The sensitivity of first, second and third cytologic exam was 11.6%, 16.8% and 23.8% respectively. Sensitivity of tests with increasing the volume of fluid was increased (p=0.004)).

Diagnostic yield of cytology in various volume range

Fluid volume (ml)	Number	Sensitivity* (%)	NPV** (%)
<10	65	25.7	53.6
11–20	96	29.5	62.7
21–30	69	42.8	80
31–40	48	63.6	76.5
>40	40	65.0	74.1
Total	318	40.8	67.6

*P=0.004 based on Chi-square test (P<0.001 for trend test), **P=0.012 based on Chi-square test (P<0.001 for trend test).

Discussion and conclusion: The sensitivity of cytology based on the study was 40.8%, and it is necessary to consider a minimum volume of fluid (31-40 cc) and to repeat the test to achieve the best results.

P3551

Clinical and laboratorial variables useful in the differential diagnosis of pleural effusions secondary to tuberculosis or lymphoma

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Tuberculosis (TB) and Lymphoma (LYM) represent two important causes of lymphocytic effusions. Due to the similarity of clinical and laboratorial features between these clinical conditions, the differential diagnosis frequently represents a challenge to the physicians.

Objective: To describe clinical and laboratory variables capable to differentiate these diseases.

Methods: We analyzed pleural fluid of 159 patients with TB or LYM. Clinical (gender, age and symptoms), Biochemical (glucose, protein, LDH, cholesterol, triglycerides, amylase and ADA) and Cytological analyses were evaluated.

Results: In both groups there was a male predominance. Age and symptoms duration were significantly higher in LYM patients, while complaining of night sweats was more common in TB.

Biochemical and cytological variables

	TB (n=130)	LYM (n=29)	p
Protein (g/dL)	5.3 (4.9–5.7)	4.1 (2.9–4.4)	<0.001
Albumin (g/dL)	2.6 (2.3–3.0)	2.5 (2.0–2.8)	0.018
LDH (U/L)	740 (553–952)	561 (355–1567)	0.454
Cholesterol (mg/dL)	85 (70–100)	68 (60–85)	0.008
Triglycerides (mg/dL)	31.5 (25–40)	34 (22–75)	0.289
Amylase (U/L)	54 (42–68)	39 (24–57)	0.012
ADA (UI/L)	96.9 (77–128)	66 (41–99)	<0.001
Total Cels (mm^3)	2700 (1248–4380)	2210 (1400–5600)	0.810
Leukocytes (%)	91 (87.8–95)	82 (67–90)	<0.001
Neutrophyles (%)	2 (1–4)	4.5 (1–13)	0.005
Eosinophilis (%)	0 (0–1)	2.2 (0–6)	0.020
Limphocytes (%)	96 (93–98)	90 (70–96)	<0.001
Monocytes (%)	1 (1.0–2.0)	1 (1.0–2.0)	0.781
Macrophages (%)	7 (4–10)	14.5 (2–25)	0,070
Mesothelial Cells (%)	1 (0–1)	1 (0–5)	0.004

Conclusion: The overlap observed in the results reinforces the difficulty in differentiating these two clinical entities. Although, high proteins and ADA levels suggest TB, the judicious cytological examination is crucial to establish the diagnosis.

P3552

Approach to undiagnosed exudative pleural effusion: The diagnostic yield of blind pleural biopsy

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Blind pleural biopsy has traditionally been performed to investigate the etiology of exudative pleural effusion in which the initial thoracentesis has been non- diagnostic. This study examines the role of blind Abrams pleural biopsy in investigation of the exudative pleural effusion in the largest tertiary pulmonary center in Iran (Massih-Daneshvari Medical Center).

Method: All patients with pleural effusion admitted from September 2007 to April 2009 entered a prospective cohort study. Patients with exudative pleural effusion underwent blind Abram pleural biopsy if the initial thoracentesis was non-diagnostic. Patients with non-diagnostic blind biopsy underwent surgical biopsy or other investigations based on physicians decision.

Results: Blind percutaneous pleural biopsy were performed in 171 patients. For all diagnoses, blind biopsy had a sensitivity of 70.1% and negative predictive value of 14.8%. For malignancy and TB diagnosis, sensitivity value was 58.9% and 88.1% and negative predictive value 63.2% and 93.6% respectively.Overall malignancy was diagnosed in 95 (58.6%) and TB in 59 (36.4%) of patients.

Sensitivity, specificity, and positive and negative predictive values of blind pleural biopsy

Variable	Sensitivity*	NPV*
Malignancy	58.9 (48.9, 68.3)	63.2 (53.7, 71.8)
TB	88.1 (77.5, 94.1)	93.6 (87.4, 96.9)
M + TB	70.1 (62.5, 76.8)	14.8 (7.7, 26.6)

*Value (95% Confidence Interval).

Conclusions: Blind Abrams needle biopsy was diagnostic in apporximatly three out four patients presenting with undiagnosed exudative pleural effusion. The data support the use of the Abrams needle in the investigation of pleural effusion especially in lesser developed countries.

P3553

Diagnostic comparison between pleural fluid cytology (PFC), cellular block (CB) and pleural biopsy (PB) under visual guidance

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PFC is the less invasive method for diagnosing pleural neoplasms and the reported sensitivity is 50%.

Methods: All patients evaluated at our institution who had PFC and CB done between May 2009 to June 2010 and had PB indicated where included in the study. Diagnostic categories were specified for the analysis of PC and CB. The pathologist who read the PFC and CB was blind to the PB final diagnosis. The accuracy of the techniques was compared to PB.

Statistical analysis: Kappa (k) index was used to evaluate the concordance between the different techniques versus the PB and the concordance between PFC and CB. The sensitivity and specificity for malignancy was established for every technique.

Results: 92 patients were included in the study. The PB was positive in 71 (77%) cases. The PFC was positive in 42 (45.6%) and the CB was positive in 35 (38%) of the cases. PB/PFC agreement was 68.5%; k=0.4. PB/CB agreement was 61.5%; k=0.32. PFC/CB agreement was 84.6%; k=0.68. Eleven out of 12 effusions with PFC suspicious of malignancy turned out to be malignant when compared to PB and all the suspicious CB where malignant in the PB. For PFC sensitivity was 64.3%, specificity was 100%, with a positive predicted value (PPV) of 100% and a negative predicted value of (NPV) 45%. For CB sensitivity was 59.2%, specificity was 100% with a PPV of 100% and a NPV of 42%.

Conclusion: There is good agreement between PFC and CB for the diagnosis of malignancy. CB trends to agree more than PFC with PB in the diagnosis of pleural mesothelioma. The sensitivity and specificity of PFC in the diagnosis of malignancy is similar to what is reported in the literature.

P3554

The role of video-assisted thoracoscopy in the diagnosis of malignant pleural mesothelioma

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The diagnosis of malignant pleural mesotelioma still remains difficult, because it needs to be differentiated from pleural metastasis and pleural benign diseases.

The aim of the study is to demonstrate and find out the opportunities of video-assisted thoracoscopy to obtain the diagnosis of malignant pleural mesothelioma.

Materials and methods: 23 patients with malignant pleural mesothelioma, complicated with pleural effusion were included in this 5-year study. Video-assisted thoracoscopy was performed in all patients. Pleural effusion, obtained through thora-

coscopy, was sent for cytological analysis. Parietal pleural biopsies were performed through thoracoscopy. Histologic examination of hematoxylin-eosin stained pleural tissue sections was performed. Three markers with positive diagnostic value (anti-cytokeratin 5/6, vimentin, S-100) were used for immunohistochemical examination.
Results: Video-assisted thoracoscopy has showed multiple nodules on parietal pleura in all patients. Histologically, in 15 cases malignant mesothelioma was classified as epithelial, and in other 8 as biphasic type. Final diagnosis malignant pleural mesothelioma was confirmed by immunohistochemistry in all cases.
Conclusion: We demonstrate that video-assisted thoracoscopy allows complete visual examination of the pleura in cases of malignant mesothelioma without pleural symphysis. Multiple and large pleural tissue specimens can be obtained through video-assisted thoracoscopy, which provides the diagnosis of malignant mesothelioma.

P3555
Diagnostic thoracoscopy in suspected malignant disease of the pleura: Pleural nodularity justifies talc poudrage
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Introduction: In a patient with suspected malignant pleural effusion and negative pleural fluid cytology, medical thoracoscopy is the next diagnostic step. Confirming the diagnosis of malignant disease involving the pleura usually means incurable cancer.
Talc poudrage during the diagnostic thoracoscopy would be a reasonable approach to gain efficient pleurodesis and to reduce patient discomfort due to repeat thoracocenteses that would be necessary in the case of recurrent pleural effusion.
However, in most institutions instantaneous section histology is not available. Thus, a visual diagnosis of malignant pleural disease would be desirable. The aim of our study was to find out if it is possible to differentiate between benign and malignant pleural disease simply by evaluating pleural nodularity.
Results: Between 11/2006 and 10/2007 we performed 81 medical thoracoscopies. 41 patients had a benign disease of the pleura and 40 had a malignant disease of the pleura. Pleural nodularity was noted in one benign case (a singular node) and in 29 malignant cases (four with a singular node, eleven with some nodes, and 14 with many nodes). Sensitivity for malignancy with the visibility of nodules was 72,5% and specificity was 97,6%. The positive predictive value for malignancy with one visible node was 80% and with some or many nodes 100%.
Conclusions: Nodularity is a strong predictor of pleural malignancy. If some or many nodes are visible during medical thoracoscopy, immediate talc pleurodesis is justified. However, in about one quarter of the cases of pleural malignancy, no nodularity was noted and for these cases immediate talc poudrage cannot be recommendated.

P3556
Review of respiratory physician inpatient pleural ultrasound service
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Introduction: The appropriate and timely investigation, interventions and management of pleural effusions remains discrepant with variable practices and pathways, possible impacting upon quality of care.
Aims: To ascertain the qualitative and quantitative outcomes of running a Respiratory physician led inpatient pleural ultrasound service.
Methods: A prospective analysis of 12-18 month experience in a district general hospital of providing an inpatient pleural service by chest physicians with thoracic ultrasound.
Results: From May 2010 to date (10 months) 111 patients were included. We compare the pleural disease activity level pre and post establishing of this service.

Table 1. Overview Pre & Post establishing Inpatient Pleural Ultrasound Service

	2009	2010	2011	May 2010 to Feb 2011
Total number of Radiology Departmental Pleural Ultrasounds	93	113	6	67
Number of "X" marks the spot by Radiology Department	55	17	1	1
Number of Physician ward based Pleural Ultrasounds	0	82	29	111

The remit and breadth of inpatient pleural service and interventions undertaken are as follows.

Table 2. Type of Inpatient Pleural Ultrasound & Intervention

Type / Intervention	Number of patients
Diagnostic US (No intervention)	35
Pre Medical Thoracoscopy	5
Diagnostic pleural aspiration	33
Therapeutic pleural aspiration	3
Diagnostic & Therapeutic pleural aspiration	22
US guided intercostal chest drain	13
Total	111

Conclusion: Provision of an inpatient pleural service does require work planning and resources but results in qualitative and quantitative improvements in patient care including: improved clinical practices by avoiding "X" marks the spot; pleural interventions done quicker and safely with no complications to date; and improved pathways for patients with pleural disease.

P3557
Safety and efficacy of pleurodesis with thoracoscopic doxycycline poudrage in malignant pleural effusion
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Objective: To assess the safety and efficacy of thoracoscopic doxycycline poudrage (TDP) for pleurodesis in malignant effusions.
Design: Retrospective.
Methods: Twenty seven patients were included in this study. Thoracoscopy was performed for diagnosis and subsequent doxycycline pleurodesis. At the end of thoracoscopy, a new method for Doxycycline delivery to the pleura was used through pneumatic atomizer insufflations where about 500-1000 mg of doxycycline were taken & prepared as a powder from the oral preparation (vibramycin 100 mg/capsule).
Results: 74.1% had a successful pleurodesis, 18.5% had partial reponse and 7.4% had failed pleurodesis at one month. Adverse effects included pain (48.1%), fever (3.7%) and pain & fever (22.2%). The mean drainage time for intercostals tube was about 1.52 days.
Conclusions: TDP is an inexpensive, well tolerated, reasonably effective, comparatively simple, safe, and capable of alleviating respiratory symptoms.

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WITHDRAWN

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Efficacy of talc pleurodesis in patients with malignant pleural effusions
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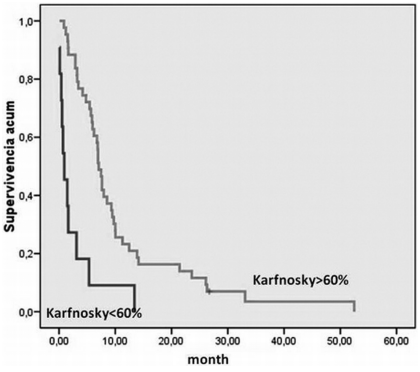
The aim of this study was to analyze complications and survival after talc pleurodesis for recurrent malignant pleural effusion.
Methods: All patients with proven malignant pleural effusion who received talc pleurodesis from January 2004 to August 2010 were included in a retrospective analysis. Talc pleurodesis was performed with talc slurry if the pleural effusion was known previously as neoplastic or under medical thoracoscopic with talc poudrage if the pleural effusion was undiagnosed at this moment. The procedure was performed only if a pulmonary reexpansion was proved in the previous day.

Postoperative pleural drainage was used until fluid output was less than 100 ml/24 h.

Results: 54 patients (30 male and 24 female) with mean age 65.9±12.5 (range 36-91) years were included. The most common primary cancer sites were lung (13 cases), mesothelioma (9), gynecological (7), digestive (8), and unknown primary (9). Six patients (11%) developed thrombosis (four in the cava vein), Two patients developed empiema and other two bronchopleural fistula. In 7 cases pleurodesis was ineffective and in nine cases pleural effusion relapsed. In 17 cases was complete success (32%) and in 21 partial success (39%). Patients with Karfnosfky index (KI) > 60% had greater survival [10.71 months 95%CI (7.34 -14.08)] than patients with KI less than 60% [2.52 months 95%CI (0.20 -4.84)]



KI more than 60% is a useful criteria to select candidates to talc pleurodesis.

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A Dutch web-survey on management of malignant pleural effusions

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Background: Malignant pleural effusion (MPE) is a major problem in patients with advanced cancer. Pleural approximation is necessary for a successful pleurodesis. The decision to perform a pleurodesis is made by the pulmonologist. Inter-physician variances in the assessment of the Chest X-ray might have impact on the final outcome of the pleurodesis procedure.

Aims and objectives: To describe decision variability among physicians regarding pleurodesis.

Methods: A series of 50 consecutive chest X-rays made during MPE drainage with clinical data were sent to all active Dutch pulmonologists, together with a questionnaire on the MPE management. The following questions were asked for all of these X-rays: (1) Do you report this lung to be expanded? (2) Would you install a sclerotic agent?; (3) What would be the estimated chance on a successful pleurodesis?

Results: Pulmonologists of 30% of the Dutch hospitals responded. All pulmonologists were aware of the national guideline. The overall probability of recommending a pleurodesis was higher in the expanded lung group than in the not expanded lungs (90 vs 39%; $p<0.0001$). More experienced pulmonologists (more vs. ≤ 100 drains per year) less often reported a fully expanded lung (49 vs 57%; p=0.03), but were likely to recommend pleurodesis more often (probability was 95 vs 85% patients with a fully expanded lung and 44 vs 32% for an incomplete expanded lung; p=0.06). All pulmonologists assessed the success rate for breast cancer higher than for other tumors (p=0.002), and they tended to recommend pleurodesis more often in this group (p=0.07).

Conclusion: Pulmonologists's experience influences decisions regarding MPE management.