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Title: Ideal volume sampling in the diagnosis of malignant pleural effusions. Just how much is really enough?

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Body: Management of pleural effusion is based on established guidelines deriving from scientific committees and experts on pleural diseases all over the world. Nevertheless true consensus on volume sampling in malignant pleural effusions has not yet been achieved. Only few publications have been published over the past 10 years. Further studies should take place in order to clarify this essential point in the management of malignant pleural effusions Methods Patients with at least medium sized pleural effusion and high risk for malignancy were enrolled. Pleural fluid was extracted as follows: 1. 10cc of pleural fluid sent for cell typing and ALB, tPr, LDH, CHOL, TG analysis 2. 20cc of pleural fluid extracted and placed as sample A 3. 50cc of pleural fluid extracted and placed as sample B 4. 150cc of pleural fluid should be extracted and placed as sample C Samples A, B and C are sent for cytology Cytology results included the following: 1. Positivity or negativity for malignancy 2. Malignant cells count (rare, infrequent, frequent, dense) Results A greater volume sampling did not increased diagnostic yield, but a higher cell count was observed in the intermediate volume sampling group. Conclusions First data in our research show that a larger quantity of pleural fluid aspirated will not improve results (whilst will affect costs and laboratory man hours), but 20 to 40 ml could play a role in diagnosis and should be the target quantity. We hope our study will help to decrease time to diagnosis, reduce cost (less paracentesis, less adverse effects, less hospitalization time) and provide material for evidence based guideline development in the future.