PURPOSE:
The treatment of a primary or secondary spontaneous pneumothorax remains controversial. The aim of this study was to compare the efficacy of different therapeutic methods used in the management of pneumothorax.

METHODS
A retrospective study was undertaken at the Pneumology Department of the University Hospital of Batna, Algeria, over a period of three years (January 2011–December 2013), in order to compare observation, simple aspiration and intercostal tube drainage in the management of spontaneous pneumothorax.

RESULTS
- 253 cases were collected, including 224 patients
- Male predominance was noted (218 men / 6 women)
- Mean age of 35.7 years ranging from 17 to 82 years.
- 62% were aged less than 35 years.
- The average hospital stay was 16.3 days.
- 66.9% of the patients were smokers with 32.2% of smoking cessation.

Chest X-ray showed
- Total pneumothorax in 204 cases (92.3%)
- Small pneumothorax in 47 cases (7.7%).

- Pneumothorax was located to the left in 98 cases (39%), right in 148 (59%) and bilateral in 5 cases (2%).
- It was inaugural in 73.7% of cases and recurrent in 26.3%.
- Recurrence was ipsilateral in 39 cases and contralateral in 12 cases.
- The mean recurrence delay was 6.5 months (1 month to 20 years).

<table>
<thead>
<tr>
<th>Observation</th>
<th>Number</th>
<th>Success rate</th>
<th>Hospitalization duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>172</td>
<td>67.9%</td>
<td>10j</td>
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</tbody>
</table>

Observation was performed as first-line therapy in 172 cases (67.9%), with 22% of success rate and average hospitalization duration of 5.13 days.

<table>
<thead>
<tr>
<th>Simple aspiration</th>
<th>Number</th>
<th>Success rate</th>
<th>Hospitalization duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>First line trt</td>
<td>46</td>
<td>43.4%</td>
<td>13 jours</td>
</tr>
<tr>
<td>Second line trt</td>
<td>119</td>
<td>79.9%</td>
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Simple aspiration was performed as first in 46 cases (18.5%), with a success rate of 43.4% and as second-line therapy after observation's failure in 119 cases (45.8%), with a success rate of 79.9% and average hospitalization duration of 13 days.

<table>
<thead>
<tr>
<th>Drainage</th>
<th>Number</th>
<th>Success rate</th>
<th>Hospitalization duration</th>
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</thead>
<tbody>
<tr>
<td>First line trt</td>
<td>35</td>
<td>91.4%</td>
<td>22 jours</td>
</tr>
<tr>
<td>Second line trt</td>
<td>59</td>
<td>23.3%</td>
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</tbody>
</table>

Intercostal tube drainage was performed as first in 35 cases and in second-line therapy in 59 cases after failure of simple aspiration or observation with a success rate of 91.4% and average hospitalization duration of 22 days.

Discussion:
- Thoracic drainage may be associated with higher initial success rate than needle aspiration[1].
- No completed randomized trials found comparing interventional vs. conservative treatment for primary spontaneous pneumothorax in adults[2].
- Simple needle aspiration for primary spontaneous pneumothorax might be as effective as tube thoracostomy and may avoid need for hospitalization[3].
- Needle aspiration may shorten hospital stay compared to tube thoracostomy in adults with pneumothorax[4].

References
1- Chest 1995 Aug;108(2):335
2- Cochrane Database Syst Rev 2014 Dec 18;(12):CD010065
3- Eur Respir J 2006 Mar;27(3):477
4- Respirol Med 2012 Nov;15(11):1000

CONCLUSION
Through this study, we conclude that the pleural drainage is still more effective than exsufflation against a longer hospital stay.

The exsufflation preceded by a rest period remains advantageous compared to exsufflation realized immediately performance of this therapy in the management of spontaneous pneumothorax.

CLINICAL IMPLICATIONS:
- simple aspiration should be preceded by a rest of 5 days in order to increase the performance of this therapy in the management of spontaneous pneumothorax.