Incidence of ARDS after contemporary cardiac surgery

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BACKGROUND

- Acute respiratory distress syndrome (ARDS) is a serious complication following cardiac surgery.

- Profile of patients referred for cardiac surgrey has changes –increased age and multiple preoperative comorbidities-

- More complex procedures (combined valve/CABG and aortic procedures).

AIM

- Analyze the incidence , mortality and predictor factors of ARDS

Definition

- American-European Consensus Conference Committee (1994) criteria
  - Acute onset
  - Bilateral infiltrates in chest radiography
  - Pulmonary-artery wedge pressure<18 mmHg
  - Acute lung injury PaO_2/FiO_2<300
  - Acute respiratory distress syndrome PaO_2/FiO_2<200

METHODS

- We retrospectively analyses prospectively collected data from our departmental database, in the period between January 2005 and June 2012

RESULTS

- 5423 patients who underwent cardiac surgery during study period
- 27 patients from this developed ARDS during the postoperative period.
- The incidence of ARDS was 0.44%, with ARDS mortality of 51.85% (14 patients).
- In our study previous cardiac surgery, shock, and number received blood products are predicting factors for development of ARDS

Author	Country	Years	Patients	Incidence	Mortality
Fowler et al.	USA	1980-81	237	1.7% (4)	50% (2/4)
Messent et al.	England	1987-88	840	1.3% (11)	55% (6/11)
Christenson et al.	Switzerland	1984-93	3.848	1% (38)	68.4% (26/38)
Asimakopulos et al.	England	1993-97	2.464	0.5% (12)	91.6% (11/12)
Kaul et al.	USA	1988-95	4.318	2.5% (103)	27.8% (30/103)
Milot et al	France	1995-98	3.278	0.4% (13)	15% (2/13)
Maillet et al.	France	2004-05	1.200	1.3% (16)	37.5% (6/16)
Present study	Israel	2005-13	5.423	0.44% (27)	51.9% (14/27)
Total			21.428	1.05% (224)	43.3% (97/224)

CONCLUSIONS

- ARDS remains serious , but rare complication following cardiac surgery associated with significant mortality.
- Over 30-year period, the frequency of ARDS and mortality remained unchanged
- Previous cardiac surgery, shock, and number of received blood products are important predicting factors for this complication.