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## International Adhesions Society

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The IAS is a volunteer organisation for the promotion of awareness and research into Adhesion Related Disorder, as well as the support of patients and families afflicted with ARD.

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Neither the IAS, Synechion, Dr. Wiseman or any other representative offers medical advice. Always consult a qualified health professional before embarking on, or changing, a course of treatment.

Due to the fledgling nature of the IAS, the IAS, its web site and newsletter is owned and operated by Synechion, Inc. We are not a registered charity.

Support for the IAS is provided free of charge by Synechion, Inc. Please consider making a contribution to defray the costs of running the IAS. Please make checks (non-deductible) payable to:  
SYNECHION and mail to:  
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Dear Disability Benefits Officer,

We have been asked to provide this letter of introduction concerning the problem of **Adhesions and Adhesion Related Disorders (ARD)**. Please make this information available to other members of your team by placing this letter in the patient's file.

Adhesions are probably the single most common and costly problem related to surgery, and yet most people have never heard the term. The problems that they have been documented to cause – pain, infertility and bowel obstruction – are under-appreciated. The following statistics from Scotland tell an important story:

?? 35% of women having open gynecologic surgery will be readmitted 1.9 times in 10 years for operations due to adhesions, or complicated by adhesions.<sup>1</sup> There are similar numbers for men also.

?? Hospital admissions for ADHESION RELATED DISORDER (ARD) rival those for heart bypass, appendix and other well known operations.<sup>2</sup>

Everyone has heard of heart, hip and appendix operations, but not ADHESION operations! In the USA in 1996, there were 474,000 procedures for peritoneal adhesiolysis.

Adhesions are an almost inevitable outcome of surgery, and the problems that they cause are sometimes severe. The lack of awareness about adhesions and ARD means that many doctors are unable to tackle adhesions, insurance companies are unwilling to pay for treatment and patients are left in misery.

<sup>1</sup> Lower AM, Hawthorn RJ, Ellis H, O'Brien F, Buchan S, Crowe AM. The impact of adhesions on hospital readmissions over ten years after 8849 open gynaecological operations: an assessment from the Surgical and Clinical Adhesions Research Study. *Br J Ob Gyn.* 2000; 107:855-862.

<sup>2</sup> Ellis H, Moran BJ, Thompson JN, et al. Adhesion-related hospital readmissions after abdominal and pelvic surgery: a retrospective cohort study *Lancet* 1999; 353:1476-1480.

ARD may become so severe that patients are unable to work. Obtaining health care or disability is difficult. Family life is destroyed and patients report that nobody believes that they are really sick. These problems magnify the basic problem to the point of suicide.

The economic costs of adhesions to society are enormous as the studies abstracted below from the US (Diamond, Fox Ray, Ray), Sweden (Ivarsson), The Netherlands (Jeekel), New Zealand (Alwan) and the UK (Menzies, Wilson) will attest. But these costs represent just the medical costs associated with adhesions. They are likely to be a fraction of the costs associated with a patient's loss of work etc. Some indication of this can be obtained from Mathias who estimated that of patients suffering from Chronic Pain (of which adhesions is one cause), 15% reported time lost from paid work and 45% reported reduced work productivity.

The International Adhesions Society has records of hundreds of cases of patients who have given up, or worse, lost their jobs due to their adhesions. Either the pain is too great that the patient quits, or the absenteeism (due to pain, hospitalization, doctor visits) is too great that the patient is fired. Due to their medical condition, ARD patients are often unemployable because of severe chronic pain that prevents them from standing or sitting or over 5 minute without experiencing pain; because of spontaneous regurgitation due to GERD; because of diarrhea that causes them to need bathroom facilities regularly and spontaneously; because they requires medication that causes drowsiness, (or other side affects that might impede production); because they needs to drink fluids constantly due to dehydration from vomiting or diarrhea.

#### Social Security/ Medicare/Medicaid Issues

The biggest single problem facing ARD patients today is the lack of awareness about adhesions. Neither the Social Security Administration of State or Government agencies administering health benefits recognize that adhesions cause problems (although the FDA has approved at least four products for adhesions and is reviewing several more). Individual Benefits officers have however ruled otherwise on a case by case basis.

The consequence is that for patients with recurrent bowel obstruction, nutritional or other problems due to adhesions, Medicare and Medicaid is often denied. Patients (of whom there are many) so severely affected who cannot work are then denied disability payments.

The situation has begun a reversal. In two State Assemblies (NY, WI) Resolutions and Citations have been made recognizing the problem of ARD and the resolve of State legislatures to help.

Please help us obtain the proper recognition for Adhesion Related Disease (ARD) by a full review of this patient's condition.

The INTERNATIONAL ADHESIONS SOCIETY (IAS) was formed in 1996 to

- ~~to~~ improve awareness about ADHESIONS
- ~~to~~ provide support to patients
- ~~to~~ information to medical professionals
- ~~to~~ support research into adhesions and their prevention

Please take a moment to visit our web-site – [www.adhesions.org](http://www.adhesions.org) – and also download our newsletter – **Connections**, copies of which we can make available for your patients, at no charge.

Please do not hesitate to contact us if you have any questions.

With our grateful thanks,

Sincerely,

David M Wiseman

David M. Wiseman Ph.D., M.R.Pharm.S.  
Founder, IAS

## ECONOMIC COSTS OF ADHESIONS

Alwan, M. H.; van Rij, A. M., and Greig, S. F. Postoperative adhesive small bowel obstruction: the resources impacts. *N Z Med J.* 1999 Nov 12; 112(1099):421-3.

**AIM:** To assess the resource implications of managing small bowel obstruction, which is common and has diverse causes and outcomes. **METHOD:** A retrospective study of 332 patients documented to have postoperative, adhesive small bowel obstruction, from 1988 to 1996, was carried out. Complications and resources used were recorded and costs were determined. **Results.** There were 207 females and 125 males, with a median age of 63 years. There were 374 hospital admissions, in 121 (32.4%) of which no surgical operation was performed. Patients had a median hospital stay of eight days. The overall median cost for a patient who had no operation was NZ\$1 039 (minimum \$94, maximum \$13 262), compared to NZ\$7 630 (minimum \$2 038, maximum \$135 173) for a patient who had an operation. Postoperative adhesive small bowel obstruction accounted for 1.3% of all admissions, 59.2% of all cases of bowel obstruction, 65.2% of all admissions with small bowel conditions, 73.5% of laparotomies for bowel obstruction and 4.1% of all laparotomies. Sixty-eight patients (20.5%) developed a total of 102 complications and there were eight deaths (2.4%). **CONCLUSION:** Postoperative adhesive small bowel obstruction is a common condition, which is associated with a substantial morbidity and workload. The treatment of these conditions has significant health care costs. Most are emergencies and the costs of their management are very variable. **Type:** JOURNAL ARTICLE. Language: Eng

Diamond, M. P. and Freeman, M. L. Clinical implications of postsurgical adhesions. *Hum Reprod Update.* 2001 Nov-2001 Dec 31; 7(6):567-76.

Adhesion development can have a major impact on a patient's subsequent health. Adhesions are a significant source of impaired organ functioning, decreased fertility, bowel obstruction, difficult re-operation, and possibly pain. Consequently, their financial sequelae are also extraordinary, with more than one billion dollars spent in the USA in 1994 on the bowel obstruction component alone. Performing adhesiolysis for pain relief appears efficacious in certain subsets of women. Unfortunately even when lysed, adhesions have a great propensity to reform. Adhesions are prevalent in all surgical fields, and nearly any compartment of the body. For treatment of infertility and recurrent pregnancy loss, lysis of intrauterine adhesions results in improved fecundability and decreased pregnancy loss.

Fox Ray N; Larsen JW Jr; Stillman RJ, and Jacobs RJ. Economic impact of hospitalizations for lower abdominal adhesiolysis in the United States in 1988. *Surgery, Gynecology & Obstetrics.* 1993 Mar; 176(3):271-6.

**BACKGROUND:** Adhesion formation represents a major complication after lower abdominal operations. It is postulated that a shift in surgical practice in recent years toward the use of less invasive techniques, such as laparoscopy, may be associated with a reduction in the incidence of intraperitoneal adhesions and in the rate of adhesiolysis procedures. Using an attributable-risk methodology, this cost-of-illness study was designed to estimate the hospitalization rate and expenditures for adhesiolysis in the United States in 1994 and to examine changes in attributable expenditures since 1988. **STUDY DESIGN:** A national hospital discharge data base was used to identify all abdominal adhesion procedures performed in the United States in 1994. Total hospitalization expenditures were based on Medicare payment rates for adhesiolysis hospitalizations and physician services, which were applied to the total number of inpatient days attributed to adhesiolysis. The results were compared with published rates and expenditures attributed to adhesiolysis in 1988. **RESULTS:** Adhesiolysis was responsible for 303,836 hospitalizations during 1994, primarily for procedures on the digestive and female reproductive

systems. These procedures accounted for 846,415 days of inpatient care and \$1.3 billion in hospitalization and surgeon expenditures. CONCLUSIONS: Although the adhesiolysis hospitalization rate has remained constant since 1988, inpatient expenditures have decreased by nearly 10% because of a 15% decrease in the average length of stay. The increased use of laparoscopy during this 6-year period does not appear to be associated with a concomitant reduction in the adhesiolysis hospitalization rate, suggesting that the causes of adhesion formation warrant further research.

Ivarsson, M. L.; Holmdahl, L.; Franzen, G., and Risberg, B. Cost of bowel obstruction resulting from adhesions. *Eur J Surg*. 1997 Sep; 163:679-684

Objective: to assess the direct costs associated with bowel obstruction resulting from adhesions. Design: prospective study. Setting: university hospital, Sweden. Subjects: 57 patients aged 16 years or older who fulfilled the clinical and radiological criteria of bowel obstruction. Interventions: none. Main outcome measures: course of, and direct costs associated with, the illness. Results: in 34 of the 57 patients (60%) bowel obstruction was caused by adhesions, and in all 34 the small bowel was obstructed (85% of all cases of small bowel obstruction). 22 of the 42 patients who required a hospital stay of more than 24 hours (52%) had adhesive obstruction, and 10 of these (45%) had to be operated on, 2 of them twice. Major complications occurred in 6 (60%) and one died. In a national perspective, adhesive bowel obstruction may cause 2330 hospital admissions annually, which is associated with an estimated direct cost of about US\$13 million. Conclusions: adhesions are a serious, common, and costly complication of surgery. Efforts have to be undertaken to control their formation. Type: journal article. Language: English

Jeekel, H. Cost implications of adhesions as highlighted in a European study. *Eur J Surg Suppl*. 1997; (579):43-5.

For a hospital, the medical costs of dealing with post-operative adhesions can be very high. Studies to determine the extent of these costs are described, together with a suggested strategy by which surgeons may help avoid future cases of adhesion formation.

Mathias SD; Kuppermann M; Liberman RF; Lipschutz RC, and Steege JF . Chronic pelvic pain: prevalence, health-related quality of life, and economic correlates. *Obstet Gynecol*. 1996 Mar; 87(3):321-327 .

OBJECTIVE: To determine the prevalence of chronic pelvic pain in U.S. women aged 18-50 years, and to examine its association with health-related quality of life, work productivity, and health care utilization. METHODS: In April and May 1994, the Gallup Organization telephoned 17,927 U.S. households to identify women aged 18-50 years who experienced chronic pelvic pain, ie, of at least 6 months' duration. Those who reported chronic pelvic pain were surveyed on severity, frequency, and diagnosis; quality of life; work loss and productivity; and health care utilization. RESULTS: Among 5263 eligible women who agreed to participate, 773 (14.7%) reported chronic pelvic pain within the past 3 months. Those who reported chronic pelvic pain had significantly lower mean scores for general health than those who did not (70.5 versus 78.8,  $P < .05$ ), and 61% of those with chronic pelvic pain reported that the etiology was unknown. Women diagnosed with endometriosis reported the most health distress, pain during or after intercourse, and interference with activities because of pain. Estimated direct medical costs for outpatient visits for chronic pelvic pain for the U.S. population of women aged 18-50 years are \$881.5 million per year. Among 548 employed respondents, 15% reported time lost from paid work and 45% reported reduced work productivity. CONCLUSION: Frequently, the cause of chronic pain is undiagnosed, although it affects approximately one in seven U.S. women. Increased awareness of its cost and impact on quality of life should promote increased medical attention to this problem.

Menzies, D.; Parker, M.; Hoare, R., and Knight, A. Small bowel obstruction due to postoperative adhesions: treatment patterns and associated costs in 110 hospital admissions. *Ann R Coll Surg Engl.* 2001 Jan; 83(1):40-6.

The workload and costs of the emergency admissions and treatment of adhesive small bowel obstruction (ASBO) are unclear. This review details and costs the admission workload of ASBO. All admissions over a 2-year period for ASBO at two district general hospitals were identified through ICD10 diagnostic codes. Diagnostic investigations, treatment patterns, ward stay and outcome information for admissions were detailed from clinical records to develop mean cost estimates and assess the associated workload. Of the 298 admissions identified, 188 were not due to ASBO and were excluded from analysis. Of the 110 admissions detailed, 41 (37%) were treated surgically and 69 (63%) conservatively. Most admissions occurred through general practitioner referral (86.4%) to accident and emergency (90.0%). Mean (SD) length of stay was 16.3 days (11.0 days) for surgical treatment and 7.0 days (4.6 days) for conservative treatment. In-patient mortality was 9.8% for the surgical group and 7.2% for the conservative group. Costs were based on the mean values from both centres for surgical and conservative admissions and detailed according to the cost of referral and follow-up (100.98 Pounds surgical versus 102.61 Pounds conservative), hospital ward and ICU stay (3,327.48 Pounds versus 1,267.92 Pounds), theatre time (832.32 Pounds surgical only), investigations (282.73 Pounds versus 207.33 Pounds) and drug costs (133.90 Pounds versus 28.29 Pounds). Total treatment cost per admission for ASBO was 4,677.41 Pounds for surgically treated admissions and 1,606.15 Pounds for conservatively treated admissions. The impact of admissions for ASBO is considerable in terms of both costs and workload. Bed stay for these admissions represents the equivalent of almost one surgical bed per year and at least 2 days theatre time, impacting on surgical capacity and waiting lists. Adhesion prevention strategies may reduce the workload associated with ASBO. The review provides useful information for planning resource allocation.

Ray, N. F.; Denton, W. G.; Thamer, M.; Henderson, S. C., and Perry, S. Abdominal adhesiolysis: inpatient care and expenditures in the United States in 1994. *J Am Coll Surg.* 1998 Jan; 186(1):1-9.

**BACKGROUND:** Adhesion formation represents a major complication after lower abdominal operations. It is postulated that a shift in surgical practice in recent years toward the use of less invasive techniques, such as laparoscopy, may be associated with a reduction in the incidence of intraperitoneal adhesions and in the rate of adhesiolysis procedures. Using an attributable-risk methodology, this cost-of-illness study was designed to estimate the hospitalization rate and expenditures for adhesiolysis in the United States in 1994 and to examine changes in attributable expenditures since 1988. **STUDY DESIGN:** A national hospital discharge data base was used to identify all abdominal adhesion procedures performed in the United States in 1994. Total hospitalization expenditures were based on Medicare payment rates for adhesiolysis hospitalizations and physician services, which were applied to the total number of inpatient days attributed to adhesiolysis. The results were compared with published rates and expenditures attributed to adhesiolysis in 1988. **RESULTS:** Adhesiolysis was responsible for 303,836 hospitalizations during 1994, primarily for procedures on the digestive and female reproductive systems. These procedures accounted for 846,415 days of inpatient care and \$1.3 billion in hospitalization and surgeon expenditures. **CONCLUSIONS:** Although the adhesiolysis hospitalization rate has remained constant since 1988, inpatient expenditures have decreased by nearly 10% because of a 15% decrease in the average length of stay. The increased use of laparoscopy during this 6-year period does not appear to be associated with a concomitant reduction in the adhesiolysis hospitalization rate, suggesting that the causes of adhesion formation warrant further research.

Wilson, M. S.; Hawkswell, J., and McCloy, R. F. Natural history of adhesional small bowel obstruction: counting the cost. *Br J Surg.* 1998 Sep; 85(9):1294-8.

**BACKGROUND:** The aim of this study was to identify patients admitted with adhesional obstruction to determine if there was an identifiable pattern to the type of initial operation, the type of treatment used for the obstructive episode and the subsequent need for further treatment. **METHODS:** Patients with adhesional obstruction were identified retrospectively in a cross-sectional study using ICD codes relating to admissions in the years 1990 to 1996. The case notes were used to assess their outcome. **RESULTS:** Fifty-nine case notes from a total of 175 identified initially satisfied the inclusion criteria. These patients had a mean age at presentation of 51 (range 16-88) years and had undergone a total of 122 operations. Thirty-one patients (53 per cent) had a single previous operation with a median time to presentation with obstruction of 5.5 years (range 11 days to 34.7 years); 33 patients (56 per cent) were treated conservatively on their first admission. There was no statistically significant difference in the outcome in patients who received either conservative or surgical treatment. The length of stay in patients treated surgically (median 11 (range 2-47) days) was significantly longer than that for those treated conservatively (median 6 (range 1-39) days) ( $P < 0.001$ ). A flow chart was constructed demonstrating the eventual outcome of the patients in the study, enabling the cost of adhesional obstruction to be calculated. **CONCLUSION:** This type of approach could be used to assess the potential effect of different treatment strategies for adhesional obstruction.