ISSN (Print): 2663-9491 ISSN (Online): 2789-6897

Original Article

Comparison between Per-Operative Findings and Histopathological Diagnosis in Cases of Total Abdominal Hysterectomy

DOI: dx.doi.org

Nazia Ahmed[1], **Yisrat Jahan** [2], **Md Kabirul Hassan**[3]

Received: 06 APR 2022
Accepted: 19 APR 2022
Published: 20 APR 2022

Published by:
Sheikh Sayera Khatun Medical College Gopalganj, Bangladesh

ABSTRACT

Introduction: *Hysterectomy is the most commonly performed gynecological surgery throughout the world as well as in our country. Many a time, the clinical and per operative diagnosis does not correlate with histopathological diagnosis.* ***Aim of the study:*** *The aim of the study was to correlate the indication of abdominal hysterectomy with the histopathological findings, in order to determine the percentage of pre-operative diagnosis that was confirmed on histopathology and to determine the frequency of unexpected pathologies.* ***Methods:*** *This cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Medical College and Hospital, Sher-e-Bangla Nagar, Dhaka, from July 2011 to December 2011. One hundred sixteen patients undergoing total abdominal hysterectomy for the gynecological disease were studied. Data was recorded on proformas, including clinical features. Indication for the procedure was documented. Surgical specimens were sent for histopathology and reports were analyzed and compared with the indications of surgery.* ***Result:*** *Commonest indication for hysterectomy was fibroid in 44.08%% followed by dysfunctional uterine bleeding (DUB) in 19.0% cases. During operation, 92.03% of fibroid uterus was found to have fibroid and the rest were found to have different pathology. Histopathological confirmation of per-operative diagnosis was 88.02% for fibroids, 94.07% for adenomyosis, 66.07% for pelvic inflammatory disease, and 54.05% for DUB. An important portion of cases (18.02%) pre-operatively diagnosed as DUB was found to have adenomyosis.* ***Conclusion:*** *Histopathological analysis correlates well with the pre-operative diagnosis and also with the per-operative findings during abdominal hysterectomy. Histopathology is thus mandatory for ensuring diagnosis and thus management.*

Keywords: *Histopathology, Abdominal, Hysterectomy, Ovarian*

1. *Junior Consultatnt, Department of Obstetrics and Gynaecology, Singair Health Complex, Manikganj, Bangladesh*
2. *Assistant Profesor, Department of Obstetrics and Gynaecology, SSMC Mitfort Hospital, Dhaka, BD*
3. *Junior Consultant, Department of Surgery, Singair Health Complex, Manikganj, Bangladesh*

(The Insight 2021; 4(2): 3-12)

INTRODUCTION

A Hysterectomy is the surgical removal of the uterus with or without a cervix, usually performed by a gynecologist[1], [2] When this is done through an abdominal incision, it is called abdominal hysterectomy[3]. There are two types of hysterectomy performed through the abdominal route- total and subtotal. Total hysterectomy, which is more common, involves removal of the whole uterus including the cervix, while in subtotal hysterectomy, the vaginal part of the cervix and a variable amount of the supravaginal cervix is preserved. Often one or both ovaries and fallopian tubes are removed at the same time a hysterectomy is done. Subtotal hysterectomy has various disadvantages, including potential cancer risks, increased incidence of vault prolapse, etc [3.4-5]. In the procedure of abdominal hysterectomy two types of incisions are commonly used, Vertical and Pfannenstiel's incision. The principle of the operations remains the same, while some variations in surgical technique may be necessary depending on variables such as large myoma, associated pelvic pain, cervical myoma, etc [6]. However, a hysterectomy must never be done without proper indication. Hysterectomy should be performed when the risk of preserving the uterus is greater than the risk of removal or when there is no successful medical treatment [7-8]. Hysterectomy is one of the most common operations done in women with an expected lifetime prevalence of 10% [9]. Hysterectomy was mentioned in Greek manuscripts 2000 years ago, but there is no proof that it was performed. The study of hysterectomy dates back to the middle of the 19th century when it was first performed after the pioneering work of Langenbeck and Clay [10]. As historians are inclined to claim when they don't know, the roots of hysterectomy are lost in the mists of antiquity. The Genuine Works of Hippocrates include no reference to hysterectomy. However, the progress until now in the techniques of hysterectomy proves the remarkable improvement in the surgical art of gynecology [7]. Nowadays, abdominal hysterectomy is one of the most common major surgical procedures in peri and postmenopausal women performed after a Caesarian Section, but the decision to perform hysterectomy has got far-reaching consequences to the patient. Hysterectomy rates range from 6.1 to 8.6 per 1000 women of all ages. Approximately 75% of all hysterectomies are performed on women between the ages of 22 to 40 years.[11] Since total abdominal hysterectomy is gradually rising in our country, evaluation of the patient before and after the operation is necessary to see the outcome of the patient. There is hardly any data available to assess the outcome of hysterectomy. Only a few studies have compared pre-operative diagnosis with per-operative and histopathological findings. So, to know the necessity, effectiveness, risk-benefit, complications, and to evaluate clinical outcomes after total abdominal hysterectomy, such kind of study is necessary for our country on this common problem.

OBJECTIVE

GENERAL OBJECTIVE

- To evaluate the clinical presentation of patient's schedules for hysterectomy
- To assess the per-operative findings of the patients

Specific Objectives

- To correlate the

histopathological diagnosis with per-operative findings

METHODS

This cross-sectional descriptive study was conducted at the Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Medical College and Hospital, Sher-e-Bangla Nagar, Bangladesh. The study duration was six months, from July 2011 to December 2011. A convenient sampling method was used to select a total of 116 patients from the inpatient department of Obstetrics and Gynaecology at the study hospital. Ethical approval was obtained from the ethical review committee and the director of the hospital. A prescribed questionnaire sheet was used to record the information. The methods were explained to the patients and verbal as well as written consent was taken in a form. All necessary physical examination of the patient was performed and a pre-operative diagnosis was made. Post-operative complications were assessed. Finally, a correlation was made between clinical diagnosis and final diagnosis based on the histopathological report.

Inclusion Criteria

- Patients operated by total abdominal hysterectomy for benign gynecological diseases
- Patients who had given consent to participate in the study.

Exclusion Criteria

- Mentally ill.
- Unable to answer the criteria question.
- Patients operated by radical hysterectomy for invasive squamous cell carcinoma.

RESULT

The most common indication for hysterectomy was fibroid in 44.08%% followed by dysfunctional uterine bleeding (DUB) in 19.0% cases. During operation, 92.03% of fibroid uterus was found to have fibroid and the rest were found to have different pathology. Histopathological confirmation of per-operative diagnosis was 88.02% for fibroids, 94.07% for adenomyosis, 66.07% for pelvic inflammatory disease, and 54.05% for DUB. An important portion of cases (18.02%) pre-operatively diagnosed as DUB was found to have adenomyosis.

Table 1: Indications of total abdominal hysterectomy (n=116)

Indications	Number	Percentage (%)
Fibroid	52	44.8
DUB	22	19.0
PID	13	11.2
Ovarian tumor	11	9.5
Adenomyosis	9	7.8
Endometriosis	5	4.3
Chronic cervicitis	2	1.7
Cervical polyp	2	1.7

Among the participants, the fibroid was the most common major indication of hysterectomy, present in 44.8% of the participants. 19% had dysfunctional uterine bleeding (DUB), 11.2% had the pelvic inflammatory disease (PID), and the remaining patients had various indications like an ovarian tumor, adenomyosis, endometriosis, cervicitis, and cervical polyp.

Table 2: Age distribution of the participants (n=116)

Age	Frequency	Percentage
36-40	26	22.41%
41-45	61	52.59%
46-50	22	18.97%
51-55	7	6.03%

Over half of the present study participants (52.59%) had been from the age group of 41-45 years. 22.41% were from the age group of 36-40 years, 18.97% were from the age group of 46-50 years, and the remaining 6.03% were from the oldest age group of 51-55 years.

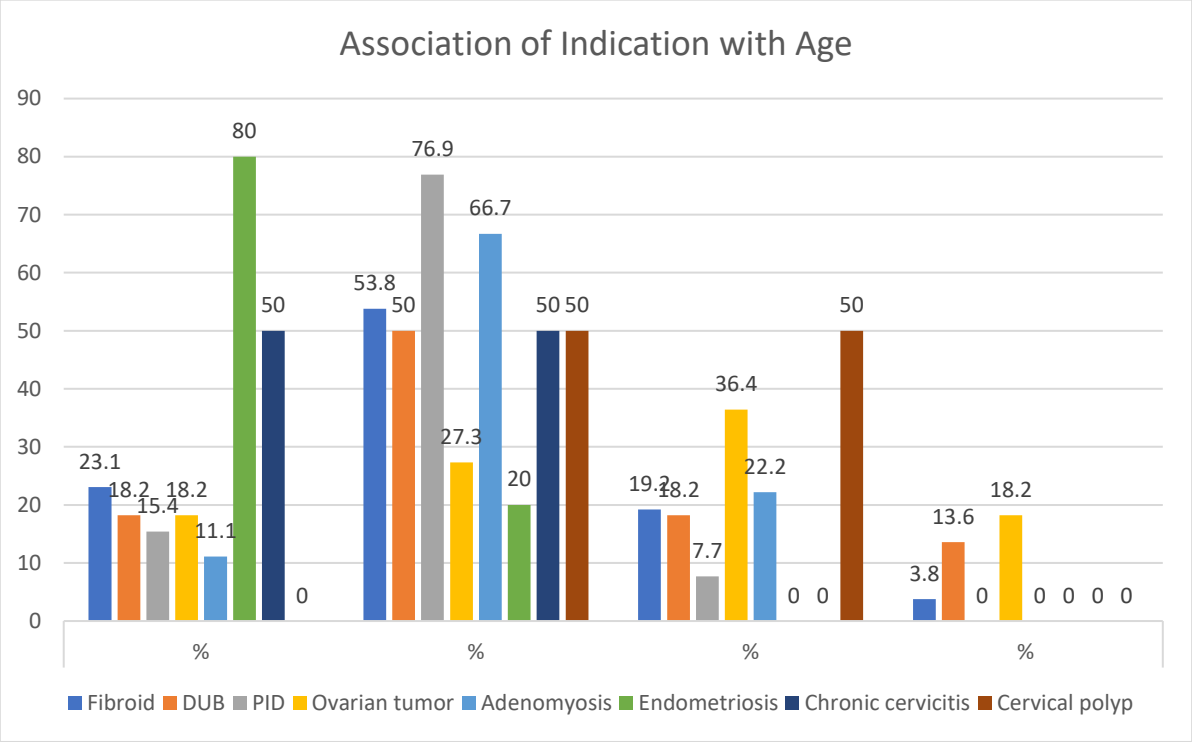

Figure 1: Association of indications of total abdominal hysterectomy with the age of patients (n=116)

The figure shows the association of different indications with patient age at a percentage. Here, the majority of all types of indicators were from the age group of 41-45 years, except endometriosis, which had a higher prevalence (80%) among the youngest group (36-40 years) of participants

Table 3: Association of indications of TAH with parity (n=116)

Indications of TAH	Number of patients	Parity							
		Nullipara		1-2		3-5		>5	
		No.	%	No.	%	No.	%	No.	%
Fibroid	52	1	1.9	30	57.7	18	34.6	3	5.8
DUB	22	0	0	16	72.7	4	18.2	2	9.1
PID	13	0	0	3	23.1	9	69.2	1	7.7
Ovarian tumor	11	0	0	2	18.2	5	45.5	4	36.4
Adenomyosis	9	0	0	0	0	6	66.7	3	33.3
Endometriosis	5	0	0	4	80	1	20	0	0
Chronic cervicitis	2	0	0	1	50	1	50	0	0
Cervical polyp	2	0	0	0	0	1	50	1	50

The table shows the association between different indications of TAH and the parity of the patients. Nullipara patients were very few (n=1) in the whole study. Most of the Fibroid, DUB, and Endometriosis patients had a parity of 1-2. Major PID and adenomyosis patients had 3-5 parity. Other groups had no such remarkable parity specificity.

Table 4: Common clinical presentation according to their incidence (n=116)

Clinical Presentation	No. of Patients	Percentage (%)
Menorrhagia / Menstrual disturbance	65	56
Dysmenorrhoea	34	29.3
lower abdominal pain	47	40.5
Vaginal discharge	10	8.6
Backache	13	11.2
Irregular per-vaginal bleeding	10	8.6
Abdominal lump	25	21.6
Dyspareunia	12	10.3
Post-coital bleeding	1	0.9

Among 116 cases, Menorrhagia was the main complaint of about 65(56.0%) patients. The second most common presentation was lower abdominal pain in about 47(29.3%) patients. This was often but not always associated with abdominal lumps. Vaginal discharge, dyspareunia, and irregular per-vaginal bleeding were not uncommon. Post-coital bleeding was found only in one patient.

Table 5: Comparison between pre-operative diagnosis with per-operative findings of TAH (n=116)

Pre-operative		Per-operative		
Diagnosis	**Number**	**Findings**	**Number**	**Percentage**
Fibroid	52	Fibroid	48	92.3
		Adenomyosis	3	5.8
		Endometrial polyp	1	1.9
DUB	22	DUB	11	50
		Adenomyosis	8	36.4
		Fibroid	3	13.6
PID	13	PID	11	84.6
		Endometriosis	2	15.4
Ovarian tumor	11	Ovarian tumor	10	90.9
		Endometriosis	1	9.1

Adenomyosis	9	Adenomyosis	8	88.9
		Endometrial polyp	1	11.1
Endometriosis	5	Endometriosis	4	80
		PID	1	20
Chronic cervicitis	2	Normal uterus with unhealthy cervix	2	100
Cervical polyp	2	Cervical Polyp	1	50
		Endometrial polyp	1	50

In this table, we can see the number of patients that were diagnosed correctly preoperatively. Some cases were clinically diagnosed as fibroid uterus but per-operatively it was found some other pathology or some other pathology associated with fibroid. Among the 52 initial fibroid diagnoses, 92.3% were fibroid at per-operative diagnosis, 5.8% were adenomyosis, and 1.9% were endometrial polyp. In total, per operative findings showed 51 fibroid cases, 11 DUB cases, 12 PID cases 19 adenomyosis cases, 7 endometriosis cases, 2 chronic cervicitis, 1 cervical polyp, and 3 endometrial polyp cases.

Table 6: Comparison between per-operative diagnosis with histopathological report (n=116)

Per-operative Findings		**Histopathological report**		
Diagnosis	**Number**	**Findings**	**Number**	**Percentage**
Fibroid	**51**	Fibroid	45	88.2
		Adenomyosis	2	3.9
		Fibroid +Adenomyosis	1	2
		DUB	2	3.9
		Fibroid +Endometriosis	1	2
DUB	**11**	DUB	6	54.5
		Adenomyosis	2	18.2
		Adenomyosis with chronic cervicitis with squamous metaplasia	1	9.1
		Fibroid	1	9.1
		Endometriosis with Fibroid	1	9.1
PID	**12**	PID	8	66.7
		No significant pathology	2	16.7
		Fibroid with PID	1	8.3

		Adenomyosis with chronic cervicitis with endometriosis	1	8.3
Ovarian tumor	**10**	Dysgerminoma	1	10
		Serous cystadenoma	2	20
		Benign cystic teratoma	1	10
		Mucinous ovarian cyst	4	40
		Malignant ovarian tumor	2	20
Adenomyosis	**19**	Adenomyosis	18	94.7
		DUB	1	5.3
Endometriosis	**7**	Endometriosis	3	42.9
		Adenomyosis +Endometriosis	2	28.6
		Fibroid +Adenomyosis	1	14.3
		PID	1	14.3
Chronic cervicitis	**2**	Chronic cervicitis	2	100
Cervical polyp	**1**	Cervical polyp	1	100
Endrometrial polyp	**3**	Endrometrial polyp	3	100

According to the previous table, when the histopathology reports were compared with per-operative findings, it was found that the finding corresponded in majority of the cases and a small portion varied with the per-operative diagnosis.

DISCUSSION

Hysterectomy is one of the most common operations done in women with an expected lifetime prevalence of 10%.[9] This study was performed to find the common indications, complications, and morbidity of abdominal hysterectomy and to correlate the clinical presentations with the per-operative and histopathological findings. The majority of the diagnosis was based on the patients' symptoms and clinical findings. Although ultrasonographic assistance was obtained in all cases, ultrasonic results did not correspond in all situations. This study included some of the common indications of Total Abdominal Hysterectomy for example Fibroid, Dysfunctional uterine bleeding, Pelvic inflammatory disease, Ovarian tumor, Adenomyosis, Endometriosis, etc. Among the present study participants, the fibroid was the most common indication of total abdominal hysterectomy. This was similar to the findings of many other studies where fibroid was the primary common indication for TAF[12]-[14]. Some studies showed a lower incidence of fibroid[15],[16]. while some other studies showed a much higher incidence[17]. This large variance of incidence was mainly due to geographical and racial influence.

The majority of the participants were from the age group of 41-45 years. This was similar to different studies where a high percentage was also observed in the reproductive age group (30-50 years)[8],[18]. Most of the patients (57.69%) diagnosed as Fibroid had parity 1 or 2, second group (34.62%) had parity 3-5. A major percentage (72.73%) of DUB patients were found to have 1 or 2 children and 18.18% had 3-5 children. These findings were supported by the findings of previous studies done by Dewan and Nahar [12],[13]. Menstrual disturbance and lower abdominal pain were some of the most common clinical presentations among the participants, while vaginal discharge, irregular vaginal bleeding, and post-coital bleeding were some of the least common presentations. During the per-operative period, the fibroid was found in 92.3% of the initial 52 fibroid diagnosed patients. 5.8% had adenomyosis, while the remaining 1.9% had an endometrial polyp. 88.2% were diagnosed accurately as fibroid by histopathology. Somewhat similar results were observed in the studies of Lee.[19] Among the 22 original diagnoses of DUB, 50% were confirmed via per-operative findings, while 54.55% were finally diagnosed in histopathology. The remaining 45.45% of patients were diagnosed with different pathologies, as 18.18% had Adenomyosis, 1 patient had fibroid, and 1 patient had fibroid with adenomyosis. In the case of PID, 84.62% were found as PID during operation, but total histopathologically confirmed PID was confirmed in 66.67% of cases. This was almost similar to the findings of Dilruba [20]. In the case of Ovarian tumors, the incidence was 9.48%, and age distribution was slightly higher in the 46–50-year age group. Per-operative accuracy was 90.91% while the remaining cases were determined to be Endometriosis (9.09%). On histopathology, different types of Ovarian tumors were diagnosed. Incidence of Adenomyosis in this series was 7.76%, which was much lower compared to other Indian and Italian studies (26% and 24.9%),[21] but was similar to the findings of a study done in the West Indies [16]. Incidence of Adenomyosis rises with rising parity which supports the theory of implantation of basal endometrium deep into the myometrium. In the present study, Adenomyosis was found in 88.89% of patients per-operatively. The total Final diagnosis of Adenomyosis according to histopathology was 94.74%. The rest were diagnosed as DUB. Endometriosis incidence in this series was 4.31% and it was observed more in the reproductive age group, especially between 36-40 years. Maximum (80%) had low parity (1-2 children). During operation, 80% were diagnosed with Endometriosis and the remaining 20% were found to be PID. Histopathological accuracy was only 42.86% due to mixed pathology like Endometriosis with Adenomyosis in 28.57%, Fibroid with Adenomyosis in 14.29% and PID was found in 14.29%. In our study, there was no death among 116 cases. Currently, the mortality rate associated with hysterectomy is <0.1%[22],[23].

LIMITATIONS OF THE STUDY

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community. Follow-up was conducted for a short period.

CONCLUSION

The histopathological analysis correlates well with per operative diagnosis. The most common pathology identified in the hysterectomy specimen was Fibroid. The majority of the patient who was

diagnosed as DUB pre-operatively were found to have adenomyosis during operation as well as on histology. Although the clinical and per operative findings do not correlate 100% with the histopathological diagnosis, histopathology is mandatory for all specimens to confirm the diagnosis, thus ensuring optimal management.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. *Dicker CJ, Greenspan JR, Strauss LT, et al. Complications of abdominal and vaginal hysterectomy among women of reproductive age in United States. American Journal Dicker CJ, Greenspan JR, Strauss LT, et al. Complications of abdominal and vaginal of Obstetrics and Gynaecology 1982; 144:841-48*
2. *Lumsden MA, Twaddle S. A randomized comparison and economic evaluation of laparoscopic assisted and abdominal hysterectomy. British Journal of Obstetrics and Gynaecology 2000; 107:1386-91.9*
3. *Akhter S. Clinical evaluayion of abdominal hysterectomy: A prospective study of 100 cases in Holy Family Red Crescent Medical College Hospital. (Dissertation) Dhaka 2008*
4. *Zekam N, Oyelese Y, Goodwin K, Colin C, Sinai I, Queenan JT. Total versus subtotal hysterectomy: a survey of gynecologists. Obstetrics & Gynecology. 2003 Aug 1;102(2):301-5.*
5. *Markowska J, Markowska A. Total or subtotal hysterectomy?. Ginekologia polska. 2000 Jan 1;71(1):34-8.*
6. *Gimbel H, Zobbe V, Anderson BM, Filtenborg T, Gluud C, Tabor A, 2003, 'Randomized controlled trial of total compared with subtotal hysterectomy with one year follow-up results', BJOG vol. 110, no. 12, pp. 1088-98*
7. *Hawkins J, Hudson CN. Abdominal hysterectomy for benign condition, Vaginal Hysterectomy In Show's Text book of operative gynaecology. 5th edition. (rev.) Churchill Livingstone (reprinted) 2000: 126,159*
8. *Dutta DC. Textbook of Gynaecology. 2nd ed. Calcutta: New Central Book Agency Ltd; 2003. p.529-55*
9. *Lee NC, Dicker RC, Rubin G, Oray HW. Confirmation of the pre-operative diagnosis for hysterectomy.Am J Obstat Gynecol 1984; 150(3):283-287.*
10. *Aniuliene R, Varzgalience L, Varzgalis M, 2007, 'A comparative analysis of hysterectomies Medicina (Kaunas)', vol 43, no. 2, pp. 118-24*
11. *Thomas Gostovall. Hysterectomy in Bereck S Jonathon edited Novak's Gynaecology 12th edition William and Wilkins. Baltimone 1966 page 727-767*
12. *Nahar L. Clinical study of abdominal hysterectomy in Sir Salimullah Medical College & Mitford Hospital Dhaka, Among 100 cases*
13. *Ishrat S. Critical analysis of indications of abdominal hysterectomy performed in Chittagong Medical College Hospital*
14. *Baird DD, Dunson DB, Hill MC, Cousins D, Schectman JM. High cumulative incidence of uterine leiomyoma in black and white women: Ultrasound evidence. Am J Obstet Gynecol 2003;188:100-7. (s)*
15. *Borgfeldt C, Andolf E. Transvaginal ultrasonographic findings in the uterus and the endometrium: Low prevalence of leiomyoma in a random sample of women age 25-40. Acta Obstet Gynecol Scand 2000;79:202-7. (s)*
16. *Sobande AA, Eskander M, Archibong EI, Damole IO. Elective hysterectomy: A clinicopathological review from Abha catchments area of Saudi Arabia. West Afr J Med 2005;24:31-5*
17. *Adelusola KA, Oginniyi SO. Hysterectomies in Nigerians; histopathological analysis of cases in Ile-Ife. Niger Postgrad Med J 2001;8:37-40. (s)*
18. *Begum F. Clinical evaluation of abdominal hysterectomy. A prospective study of 104 cases in Holy Family Red Crescent Medical College Hospital, (Dissertation), Dhaka: BCPS;2006.*
19. *Lee NC, Dicker RC, Rubin G, Oray HW. Confirmation of the pre-operative diagnosis for hysterectomy.Am J Obstat Gynecol 1984; 150(3):283-287.*
20. *Zeba D. Study on clinical presentation, laparatomy findings and Histopathological diagnosis of total abdominal hysterectomy performed in*

BSMMU. (Dissertation), Dhaka: BCPS;2003.

21. *Shergill SK, Shergill HK, Gupya M, Kaur S. Clinicopathological study of hysterectomies. J Indian Med Assoc 2002;100(4):238-239,246.*
22. *Marsha MJA, Metcalfe MA, Pherson K, et al. The VALUE national hysterectomy study, description of the patient and their surgery. BJOG 2002; 109:302-312.*
23. *Weber AM, Lee JC. Use of alternative technique of hysterectomy in Ohio, 1988-1994. N Engl J Med 1996; 335:483-489.*