

## LISTERIOSIS IN FISH AND ABORTION CASES IN WOMEN

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### SUMMARY

A total of 100 fish samples were collected from various markets at Alexandria province (50 samples), and Assiut province (50 samples). Three types of fish were collected (Karmout, 40, Bolti, 50, Anomah Umm Baouez, 10). On the other hand, 50 vaginal swabs were examined for the presence of *Listeria monocytogenes*. The total incidence of *L. monocytogenes* was 5% while the incidence was varied from Alex. (6%) to Assiut (4%). Moreover, only one vaginal swab was positive for *L. monocytogenes*. The public health importance of *L. monocytogenes* was discussed.

### INTRODUCTION

In recent years, *Listeria* has attracted the wide attention of many investigators. Fishes are subjected to contamination from various sources either during their presence in aquatic environment or after being harvested for marketing so, they contribute much foodborne microbial infection. The flesh and body fluids of freshly caught fish are sterile but during marketing they carry a considerable load of certain pathogens (Shewan, 1972).

*Listeria* was isolated from fish by many investigators (Ericsson *et al.*, 1997, Farber, 2000, Huss *et al.*, 2000; Walter, 2000).

On the other hand, *Listeria* is ubiquitous in nature and isolated from many aborted women by many investigators (Facinelli *et al.*, 1989, Sultanov and Saidov, 1998, Hlinstak *et al.*, 1999, Benshushan *et al.*, 2002, Gilbert, 2002; Meier and Lopez, 2001).

The aim of the study was designed to obtain information about the occurrence of listeriosis in some types of fish and abortion cases in women.

## **MATERIAL AND METHODS**

### **Examination of fish:**

### **Sampling of fish:**

A total of 100 fish were collected from various markets at Assiut (50 fish) and Alexandria (50 fish).

Three types of fish were collected, 40 karmout (*Clarias anguillaris*), 25 samples was collected from Alexandria province and 15 from Assuit province. 50 Bolti (*Oreochromis niloticus*), 25 samples were collected from each province and 10 Anomah Umm Baouez (*Mormyrus kannume*) were collected from Assuit only (Table 1).

### **Isolation and identification of *Listeria Monocytogenes*:**

The isolation and identification of *L. monocytogenes* from the examined fish was carried out according to Lovett *et al.*, (1988).

### **Vaginal Swabs samples:**

fifty vaginal swabs were collected from women who had experienced spontaneous abortions in Department of Obstetrics and Gynecology, Fac. Med. Alex. Univ. and Gynecological Medical Clinic at Alex. Province.

The isolation and identification of *L. monocytogenes* were carried out according to Lovett *et al.*, (1988).

## **RESULTS AND DISCUSSION**

*Listeria* are bacteria found frequently in soil, leaf litter, sewage, dust and water. The organism often moves through animals and humans without causing illness and has been found in many domestic and wild animals including birds and fish Lukinmaa *et al.*, 2003.

The results recorded in (Table 2) showed that the total incidence of *Listeria monocytogenes* in the examined fish was 5% which is much higher than those obtained by El shatter and Nour (2000), Gomas *et al.*, (2003) and Wagner and Allerberger (2003), and lower than Hartemink and Georgsson (1991) (46%), Heinilz and Johnson (1998) (14%) , Bianchini *et al.*, (1999) (65.5 %), Dominquez *et al.*, (2001) (22.3%) and Thimothe *et al.*, (2002) (29,5%). However, Liv Martin *et al.*, (2000), isolated *L. monocytogenes* from fish without mentioning their incidence and

said that the muscles of uncooked fish have been assumed to be sources for sporadic cases of listeriosis.

These variations might be due to the technique used in isolation of *Listeria* and the pollution of water, which reflected on fish contamination, as well as the type of fish.

The incidence of *L. monocytogenes* in Alexandria Province was found to be higher than in Assuit Province (Table 2). This explained the heavy pollution of water resulting from the throwing of sewage into waterways, which often contaminate fish. The results illustrated in (Table 3) revealed the higher incidence of *L. monocytogenes* in Karmout followed by Bolti which confirm the presence of *L. monocytogenes* in contaminated mud and soil (Hlinstak *et al.*, (1999), Lukinmaa *et al.*, (2003).

On the other hand, a total of 50 vaginal swabs taken from cases of spontaneous abortions were examined bacteriologically for the presence of *L. monocytogenes*, Only one case, a woman aged 21 year proved to be infected with *L. monocytogenes*. The history of the case indicated that abortion occurred in the second half of pregnancy as confirmed by Hlinstak *et al.*, (1999) and Benschushan *et al.*, (2002). The obtained results were found to be lower than Hassanein, (1994) who found that the occurrence of human listeriosis was 4.5%. Despite the lack of associations found between cases of abortions and fish consumption, the epidemiological link between food especially fish and human listeriosis can be explained by the isolation of *L. monocytogenes* from humans. So the sanitary measures and the efficiently cooked fish will minimize the infection with listeriosis.

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(Table 1): Type and Number of the examined fish

Provinces	Karmout	Bolti	Anomah Umm Baouez	Total
Alexandria	25	25	0	50
Assiut	15	25	10	50
Total	40	50	10	100

(Table 2): The total incidence of *L. monocytogenes* isolated from fish at Alex. And Assuit provinces

Provinces	No. of examined	No. of positive	%
Alexandria	50	3	6
Assiut	50	2	4
Total	100	5	5

(Table 3): Distribution of *L. monocytogenes* in different types of fish.

Province	Karmout			Bolti			Baouez			Total		
	No	+ve	%	No	+ve	%	No	+ve	%	No	+ve	%
Alex	25	2	8	25	1	4	-	-	-	50	3	6
Assiut	15	1	6.7	25	1	4	10	-	-	50	2	4
Total	40	3	7.5	50	2	4	10	-	-	100	5	5

## الملخص العربي

### الليستيريوزيس في السمك و حالات الإجهاض في النساء

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تم جمع عدد 100 عينة من الأسماك من الأسواق المختلفة بمحافظتي الإسكندرية ( 50 عينة) و أسيوط ( 50 عينة ) . و كانت أنواع الأسماك ثلاثة و هي القرموط (40)، البلطي ( 50) و أنومه أم بويز (10). كذلك تم جمع عدد 50 مسحة مهبلية من سيدات تعرضن للإجهاض التلقائي . و قد تم فحص العينات بكتريولوجيا لوجود ميكروب الليستيريا مونوسيتوجينز . و كانت النسبة الكلية لوجود الميكروب هي ( 5% ) . بينما اختلفت النسبة بين محافظة الإسكندرية ( 6% ) و محافظة أسيوط ( 4%). من ناحية أخرى تم عزل نفس الميكروب من عينة واحدة فقط من 50 مسحة مهبلية من نساء حوامل. هذا وقد تم مناقشة الأهمية الصحية لهذا الميكروب.