Summary

Bladder cancer is one of the most prevalent cancer allover the world. Bilharzial cancer bladder is the most frequent type of cancer bladder in Egypt, this is simply due to endemicity of schistosomiasis in Egypt. Moreover, it is one of cancer that has a high tendency for recurrence after surgical removal, a fact that necessitates the need for frequent follow-up investigations.

Fas/FasL system is one of the apoptotic systems implicated in growth or recurrence of cancer, thus elevation of serum soluble levels of Fas could be considered as a indication of growth or recurrence of cancer.

This study is designed to evaluate the role played by sFas/sFasL system in the bilharzial cancer bladder, as a trial to approach a serum biomarker for screening, diagnosing and following-up patients with cancer bladder.

This study comprised 26 patients, 19 males and 7 females with mean age of 54.9±6.3; range of 44-67 years and 10 controls. Patients included 10 bilharzial patients diagnosed by having previous history of terminal hematuria, positive serum anti-bilharzial antibodies with the detection of ova of schistosoma hematobium on urine examination. Cancer patients were selected depending on cystoscopic findings and results of histopathological examination of punch biopsy taken during cystoscopy to have cancer bladder of either Ta or T1 grade.

After being fully investigated, cancer patients underwent cystoscopic localized excision of the lesion with safety margin and extensive base cauterization and underwent follow-up cystoscopy, 3 month after surgery, for early recurrence or residual lesions.

Three venous blood samples were taken from all patients; preoperative, one week and 3 month after surgery; controls gave one

blood sample for comparison. Serum was separated and used for estimation of serum sFas and sFasL levels by ELISA.

There were 13 lesions located in left lateral and 3 lesions in the right lateral bladder wall. There are 10 cases with T_a and 6 with T_1 lesions. Mean lesion size, as determined cystoscopically, was 3±0.6; range: 1.5-4 cm^2. All lesions are fragile; easily to bleed on touch, mobile and no lesion showed fixity to underlying structures.

Preoperative serum sFas levels were ranged between 0.9 and 115.33 ng/ml in cancer patients and were significantly higher in cancer bladder patients ($P<0.05$) compared to control levels. Furthermore, preoperative serum sFas was significantly ($P<0.05$) increased in patients with Ta cancer compared to control levels and also in patients with T1 lesions compared to levels estimated in control and in those with Ta lesions, with a positive significant correlation between preoperative serum sFas levels and lesion' surface area, ($r=0.587$, $P<0.05$) and pathological grade of the lesion, ($r=0.957$, $P<0.001$).

There was a significant decrease in serum sFas levels one-week after surgery compared to preoperative levels, but were still significantly ($P<0.05$) higher compared to control levels. Also, serum sFas levels, one-week after surgery, showed a significant ($P<0.05$) decrease compared to their preoperative levels in cases with T1 lesions, while, showed a significant ($P<0.05$) increase compared to control levels and non-significant increase compared to their preoperative levels

Serum sFas estimated 3-months after surgery showed a progressive decrease of its levels in cases with Ta lesions and in patients with T1 lesions showed a significant ($P<0.05$) decrease compared to their preoperative levels.

There is a non-significant decrease in serum sFasL in bilharzial patients compared to control levels, while the mean preoperative serum sFasL level was significantly ($P<0.05$) increased in cancer, both Ta and T1, patients compared to levels detected in controls with a non-

significant decrease in T1 cancer patients compared to those with Ta lesions with a negative significant correlation ($r=-0.544$, $P<0.05$) between preoperative serum sFasL levels and lesion' surface area.

Serum sFasL levels measured one-week after surgery showed a significant ($P<0.05$) increase compared to control levels but showed a non-significant decrease compared to preoperative levels. While, there was a significant ($P<0.05$) decrease in 3-months postoperative serum sFasL levels compared to both preoperative and one-week postoperative levels in cases with Ta lesions, whereas the changes were non-significant in cases with T1 lesions.

It could be concluded that Fas/FasL apoptotic system is implicated in cancer bladder pathogenesis. Serum sFas showed progressive significant decrease after surgery, but maintained elevated in cases of incomplete excision and its levels re-increase in cases with recurrent lesion, thus it could be used as a non-invasive modality for follow-up of cases with superficial cancer bladder for early alarming of occurrence or recurrence and could replace frequent postoperative cystoscopic examination