



## Nephropathies and pregnancies: about a series of 17 cases.

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### ABSTRACT

**Introduction:** The association of nephropathy and pregnancy represents a situation at high risk of complications. The aim of the work is to analyze the clinical, histological and prognostic data of 17 patients with renal impairment during pregnancy; collected in the nephrology department of Marrakech. **Results:** The average age is 27 years. The mode of discovery is nephrotic syndrome in 6 cases and renal failure in 7 cases. The renal biopsy puncture is performed in 12 patients. The histological study showed two cases of extra-membranous glomerulonephritis, one case of chronic interstitial tubulo nephritis, one patient with lupus nephropathy, and histological signs of preeclampsia in one patient, extra-capillary glomerulonephritis in one patient, and cortical necrosis in one patient. one case, membranous proliferative glomerulonephritis in one case, segmental and focal hyalinosis in two cases, glomerulosclerosis in one patient, and IgA nephropathy in one case. Obstetrically, a therapeutic termination of pregnancy is indicated in 3 cases, a cesarean section for maternal rescue is performed in 3 patients. 5 out of 14 deliveries are premature. With 3 neonatal deaths and one intrauterine fetal death. The evolution is marked by the installation of a chronic renal insufficiency in 4 cases whereas it is terminal at home 3 cases. In addition, a favorable evolution is noted in 8 cases. **Conclusion:** Any pregnancy in a woman with nephropathy is a high-risk pregnancy; and that must be planned and followed.

**Keywords :** Pregnancy - renal failure - proteinuria - preeclampsia - maternal-fetal complications.

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### INTRODUCTION

Pregnancy is a physiological situation; accompanied by hormonal changes and changes in systemic hemodynamics and renal plasma flow.

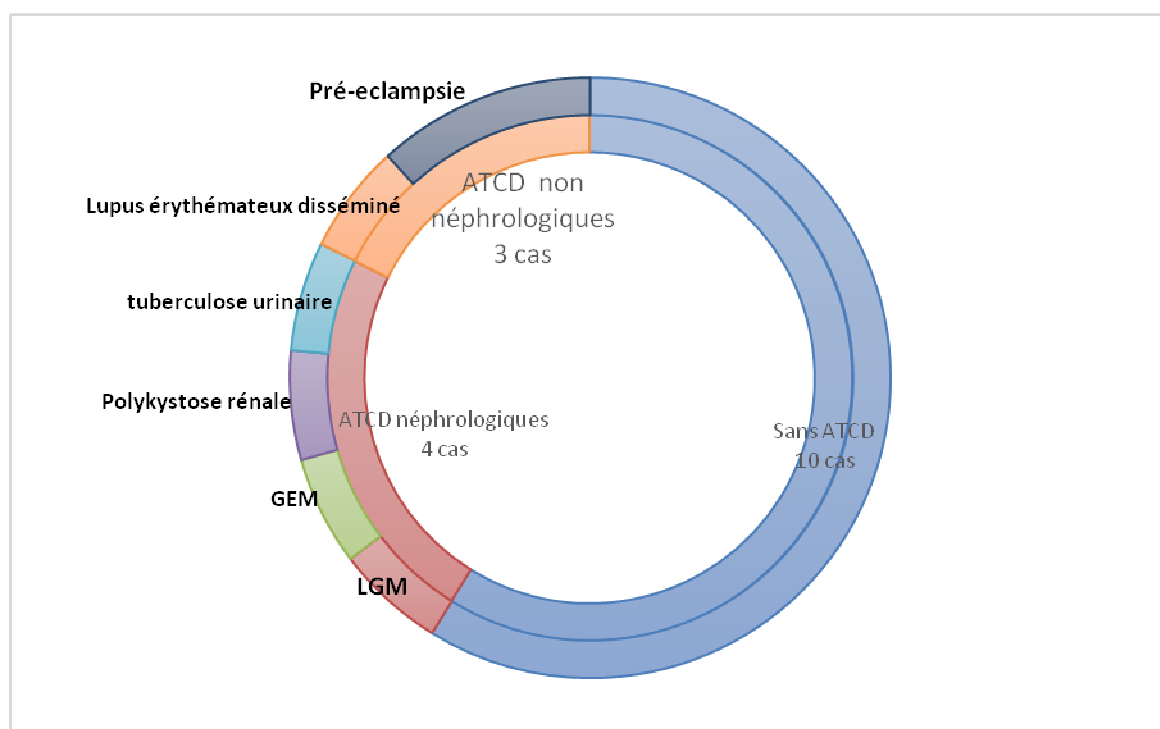
It can be fraught with complications, if it is associated with nephropathy; This risk is usually proportional to the degree of pre-existing renal insufficiency, the presence or absence of proteinuria and / or arterial hypertension (HTA). It also depends on the type of nephropathy or basic systemic disease. The follow-up of these patients is a challenge and requires multidisciplinary care by the generalist / internist, the nephrologist and the obstetrician. Indeed, the stabilization of renal function, as well as the control of basic disease activity before conception and during pregnancy, are essential for both maternal and fetal prognosis.

## MATERIALS AND METHODS

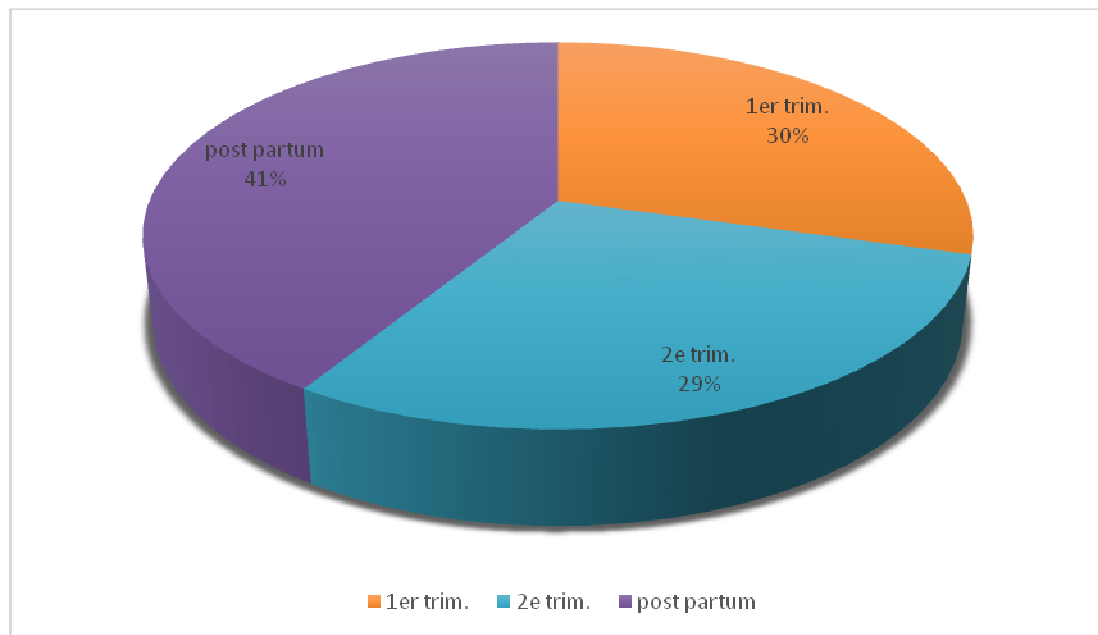
We conducted a retrospective study at the nephrology department of Mohammed VI CHU; from Marrakech; concerning 17 cases collected between January 2015 and September 2017. This study included all patients with renal impairment discovered during pregnancy or in immediate postpartum. We analyzed the clinical, histological and prognostic data of these renal attacks as well as the maternal-fetal impact.

## RESULTS AND DISCUSSION

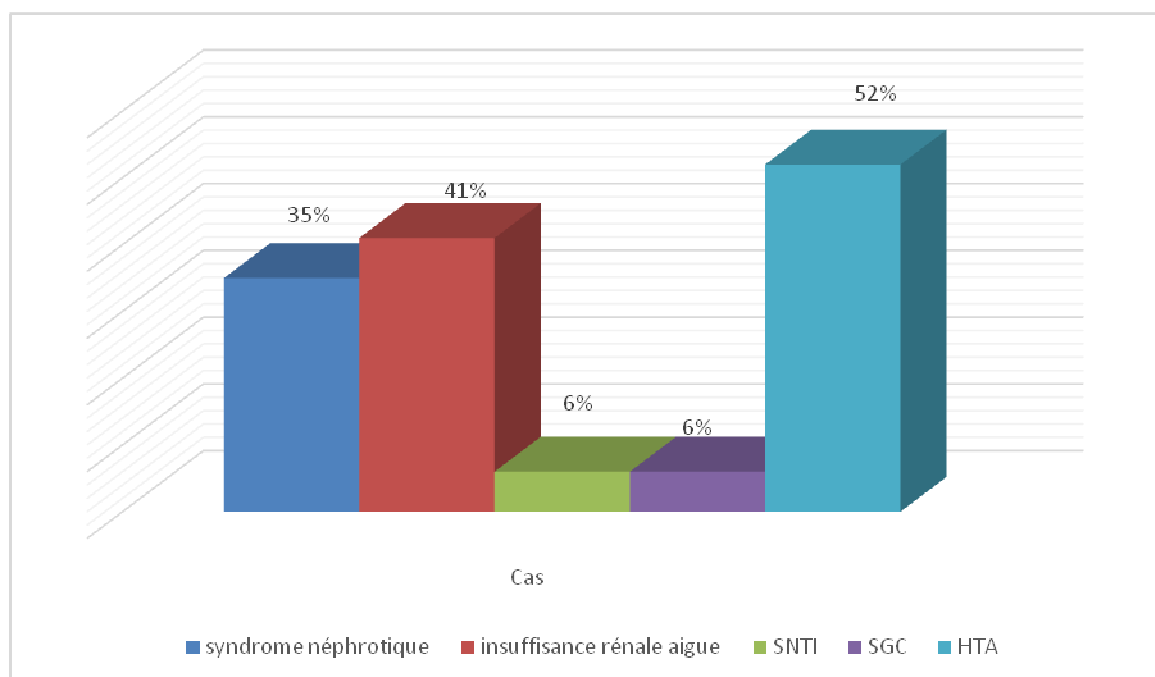
Our series includes 17 women; with an average age of 27 years. 10 primiparous; with 7 multipares. The mode of discovery was a nephrotic syndrome in 6 cases, an ARI in 7 cases, a chronic glomerular nephropathy in 1 case, and a chronic interstitial tubulo nephropathy syndrome in 3 cases.



**Figure 1** : Nephrological and non-nephrological history in patients.

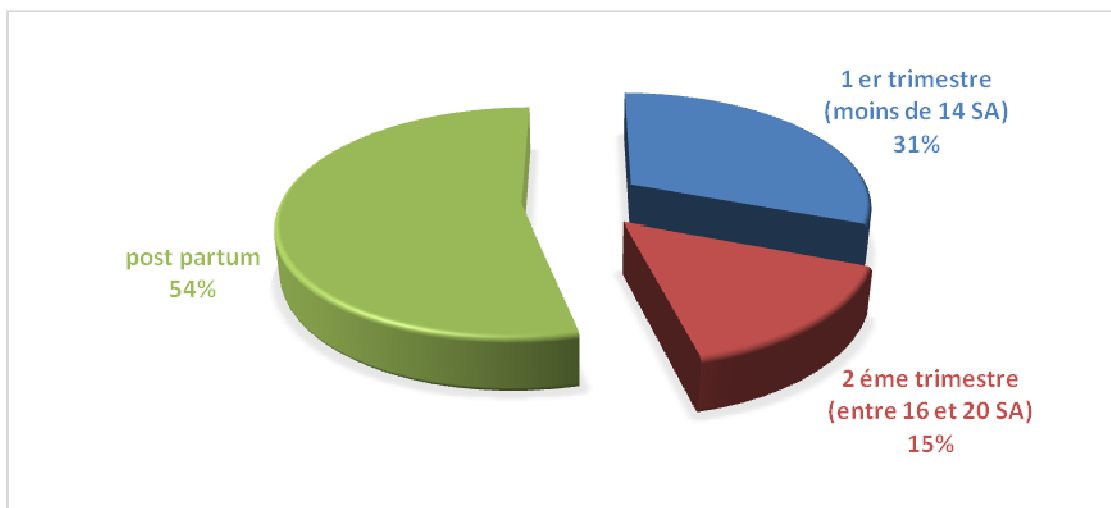


**Figure 2 :** The discovery of renal involvement in relation to the gestational age.



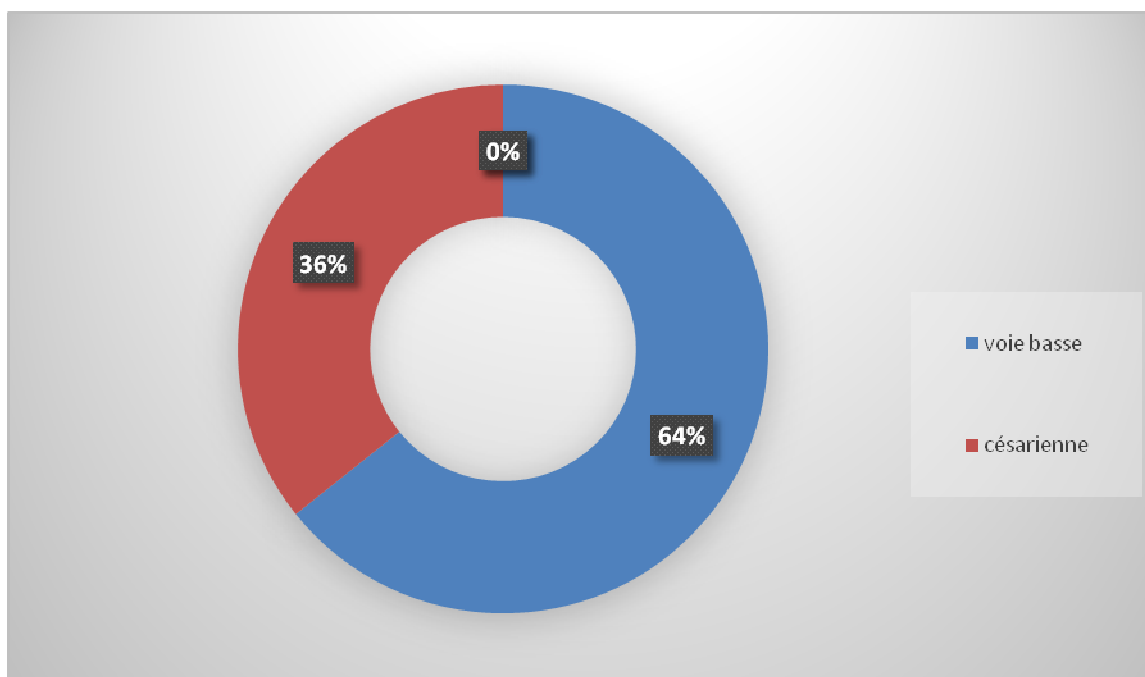
**Figure 3 :** the mode of discovery of renal impairment.

The renal biopsy puncture was performed in 12 patients, with a gestational age of less than 16 weeks of amenorrhea (SA) in 4 patients, between 16 and 20 in 2 cases. And postpartum in 7 patients.

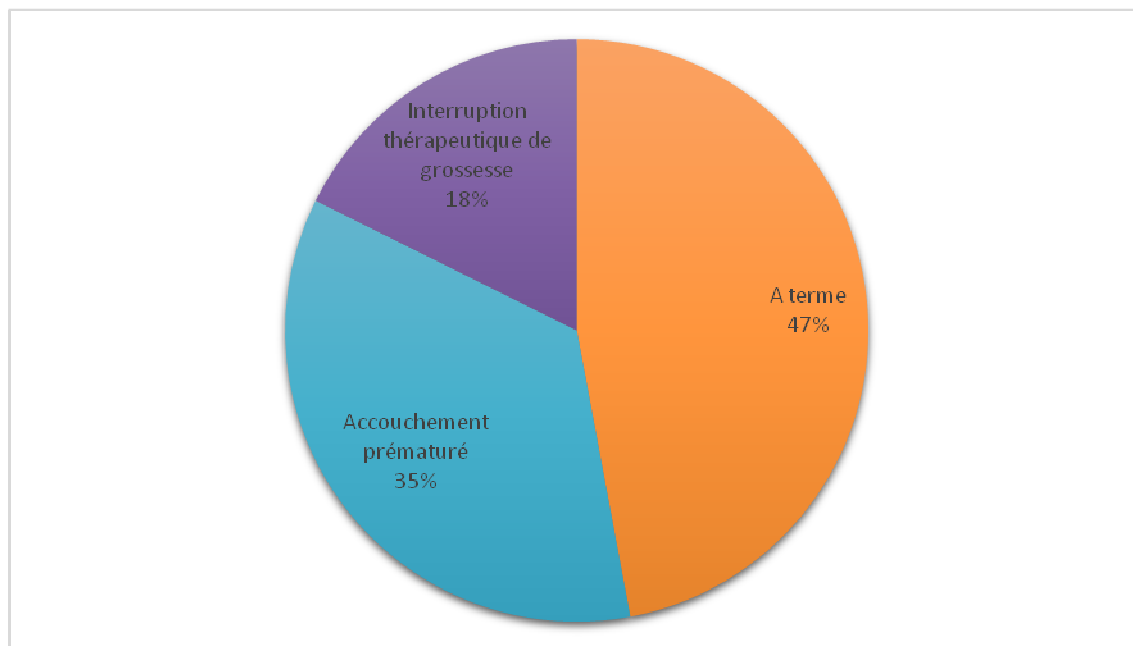


**Figure 4 :** the time of achievement of ACB in relation to gestational age.

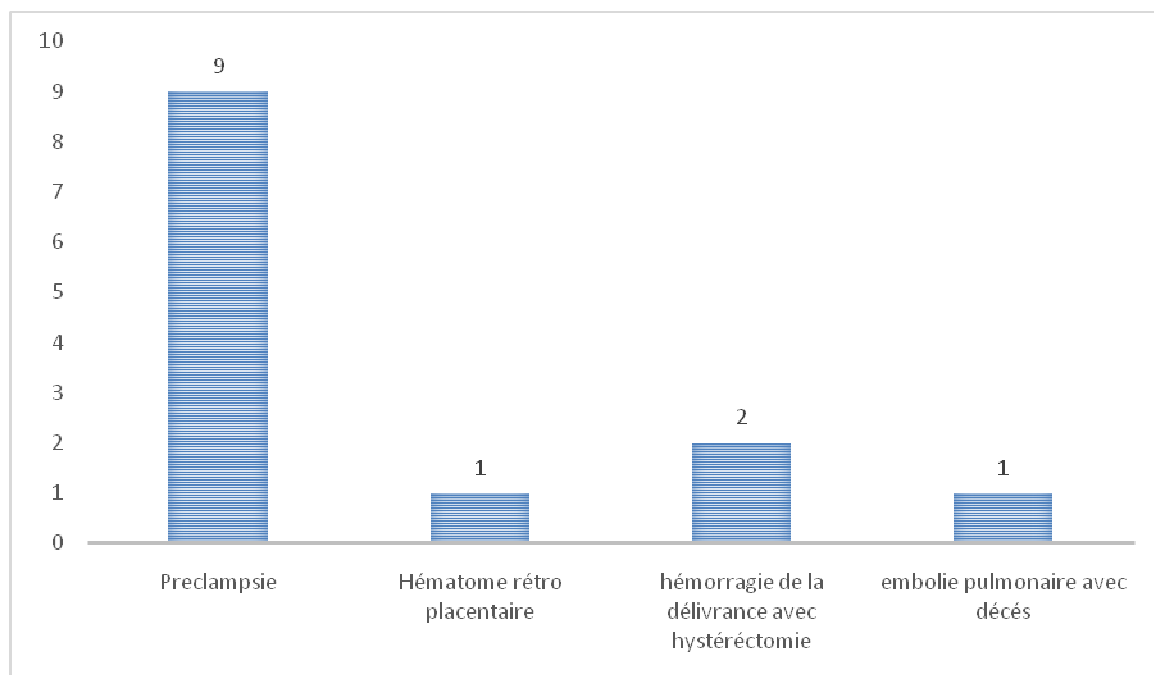
The histological study revealed two cases of extra-membranous glomerulonephritis, a case of chronic interstitial tubulo nephritis, lupus nephropathy in one patient, and histological signs of preeclampsia in one patient, extra membranous glomerulonephritis in one patient and cortical necrosis. in one case, membrano proliferative glomerulonephritis in one case, segmental and focal hyalinosis in two cases, glomerulosclerosis in one patient, and IgA nephropathy in one case. Obstetrically, therapeutic termination of pregnancy was indicated in 3 cases, a caesarean section for maternal rescue was performed in 3 patients, with recourse to hemostasis hysterectomy in 2 cases. 5 out of 14 deliveries were premature. With 3 neonatal deaths and one intrauterine fetal death. The renal outcome was marked by the installation of a CKD in 4 cases whereas a CKD terminal occurred in 3 cases, with a postpartum death of a patient. Moreover, a favorable evolution was noted in 8 cases, with persistence of the nephrotic syndrome in 2 cases.



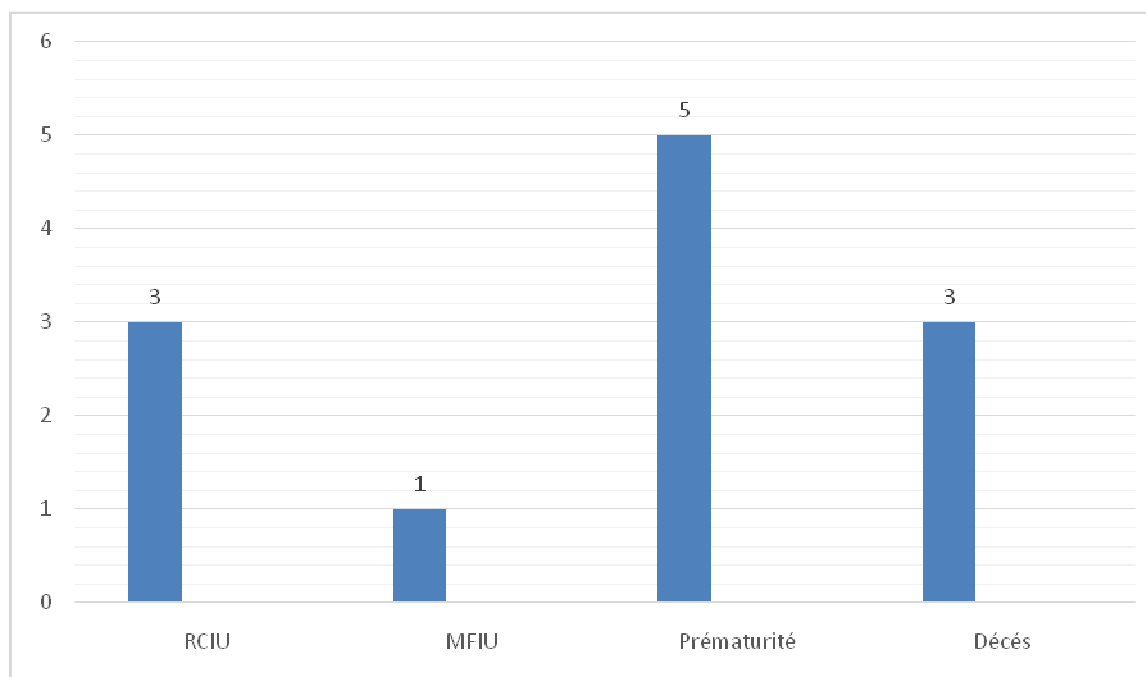
**Figure 5 :** the delivery routes.



**Figure 6 :** The term of childbirth.



**Figure7:** maternal and obstetrical complications.



**Figure 8 :** Les complications fœtales.

Obstetrically, therapeutic termination of pregnancy was indicated in 3 cases, a caesarean section for maternal rescue was performed in 3 patients, with recourse to hemostasis hysterectomy in 2 patients. 5 out of 14 deliveries were premature. With 3 neonatal deaths and one intrauterine fetal death. The renal outcome was marked by the establishment of chronic renal failure in 4 cases, whereas a late CKD occurred in 3 cases, with a postpartum death of a patient. Moreover, a favorable evolution was noted in 8 cases, with persistence of the nephrotic syndrome in 2 cases.

## Discussion

The age of childbearing coincides with a peak in the incidence of certain nephropathies. The prevalence of women of childbearing age with chronic kidney disease is presently close to 3% (1). These pregnancies, however, are not without maternal-fetal risks. Pregnancy can alter the course of IR and IR can cause specific complications during pregnancy. The risk is generally proportional to the degree of pre-existing renal insufficiency (RI), whether or not there is proteinuria and / or hypertension. It also depends on the type of nephropathy or basic systemic disease (2).

It is well established that chronic kidney disease and hypertension negatively influence the course of pregnancy (3). Thus, proteinuria is well known as a predictor of maternal-fetal complications during pregnancy (4).

On the other hand ; Pregnancy exposes women to the risk of progression to the stage of chronic end stage renal failure (2); the presence of renal impairment at the time of conception is the main risk factor for renal function impairment (5).

A randomized study of 67 patients demonstrated that patients with moderate CKD (creatinine 124-168  $\mu\text{mol} / \text{l}$ ) had a 40% risk of impairing their renal function during pregnancy, and 50% of these persisted after childbirth (6) .Development additional pre-eclampsia may further aggravate kidney damage. In a literature review published in 2006 (7), 64% of patients with renal failure developed re-eclampsia.

Some case reports highlight the fact that deterioration of renal function and development of

preeclampsia may occur when proteinuria is present; even non-nephrotic; is present at conception even in the absence of MRC and arterial hypertension (8).

On the other hand ; A large study, conducted between 1965 and 1994, evaluated the progression of glomerular disease in 360 women with preserved renal function (creatinine 100  $\mu\text{mol} / \text{L}$ ) and reported that pregnancy was not associated with progression of insufficiency. renal, regardless of the type of glomerulopathy (5).

Data from the literature on primary nephropathy in pregnant women are very rare. The most commonly described glomerulopathy during pregnancy is IgA nephropathy (5; 9). View its prevalence among young women.

The realization of the renal biopsy during pregnancy is not contraindicated, but it must be taken into account only when its implementation has an impact on the therapeutic approach (10). Its realization is often accompanied by anxiety, because the intervention can put not only the patient in danger, but also the foetus (5). The indications of a renal biopsy include a sudden deterioration of the renal function, a de novo syndrome. nephrotic and / or suspicion of glomerulonephritis. The data are limited with respect to the safety of renal biopsy during pregnancy, the only significant series dating back to 1987 showing a low complication rate of 4.5% based on 111 biopsies in 104 women over the age of 20 (11). In our study no complication was noted in biopsied patients.

Diagnosing extra-preeclampsia in patients with pre-existing hypertension or CKD is one of the most difficult tasks a nephrologist or obstetrician faces (5). Misdiagnosis may result in premature termination of pregnancy if eclampsia is misdiagnosed or an inappropriate intensification of immunosuppression is suspected if glomerulonephritis is aggravated.

During systemic diseases, the prognosis of pregnancy is more reserved than during primary renal diseases. Indeed, in addition to the general risk factors of proteinuria, hypertension, and renal function, extrarenal manifestations of systemic disease and, possibly, the risk of an evolutionary onset (12 ).

Concerning the fetal complications of these pregnancies; studies have found a high rate of preterm delivery (4) in patients with MRC, with a perinatal mortality rate five times higher than the normal population (13).

The study by Jones and Hayslett (6) found 59% of premature delivery. Birth weight inferior to the 10th percentile is noted in 39% of newborns. In the subgroup of patients with severe renal failure (serum creatinine > 250  $\mu\text{mol} / \text{l}$ ), the frequency of premature deliveries and intra uterine growth delays was significantly higher than in those with renal insufficiency. Our study also noted a high rate of fetal complications found especially in patients with severe IR and severe preeclampsia.

Multidisciplinary care; of these patients is needed, including the nephrologist, the obstetrician, the neonatologist and the pharmacologist.

The use of antihypertensive or immunosuppressive drugs should be considered, if necessary for the control of the maternal disease, while avoiding the molecules considered harmful in these patients. Maternal and fetal clinical and paraclinical monitoring should be regular and individualized, depending on the clinical picture, the prognosis of the underlying renal disease, and the maternal-fetal impact.

## CONCLUSION

Nephropathy in a pregnant woman; classifies pregnancy as high risk; requiring individualized and

multidisciplinary care; the risk of maternal and fetal complications. This encourages good patient information and risk assessment in these sometimes sensitive situations. Our work is a small study and our results should be confirmed by other larger cohorts in order to determine the prognostic elements and to plot a consensual management.

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