

Seasonal Adenovirus Conjunctivitis Versus Conjunctivitis due to Covid-19, why we have to Make the Difference?

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Abstract

Introduction: The clinical expression of viral conjunctivitis is similar regardless of the virus. The particular tropism towards certain organs (ENT, pulmonary, digestive...) helps orient the diagnosis towards one virus rather than another. While the visual prognosis is almost always benign, the vital prognosis depends on systemic damage. In the equatorial zone, from September to March an epidemic of Adenovirus influenza accompanies the transition from the dry season to the rainy season. Why we have to make the difference between Adenovirus conjunctivitis and conjunctivitis due to covid-19? The objective of this survey was to determine the prevalence of cases of covid-19 in patients suspected of suffering from seasonal conjunctivitis caused by Adenovirus.

Materials and Methods: Analytical cross-sectional study carried out over a period of 7 months in two groups of 105 patients each (G1, G2) suffering from viral conjunctivitis. G2 were contact subjects of covid-19. The prevalence of covid-19 was compared in the two groups. The antigen test was carried out systematically and associated with the PCR test (G3 and G4) in the event of a negative result. The statistical tests used were: prevalence ratio (Rp) with its confidence interval, significance threshold (p) less than 0.05.

Results: Positive results of the antigen test: 63.8% (n = 67/105) G1 vs 67.6% (n = 71/105) G2 (p > 0.05). Positive PCR results: 47.37% (n = 18/38) G3 vs 57.14% (n = 20/34) G4 (p > 0.05).

Conclusion: During a pandemic period performing a covid-19 antigen test should be systematic in the presence of conjunctivitis.

Keywords: Covid-19; Adenovirus; Conjunctivitis; Antigen Test; PCR

Introduction

Viral conjunctivitis most often integrates a clinical environment with damage to other organs depending on the tropism and virulence of the causative virus. It can therefore be associated with digestive signs (diarrhea, vomiting, abdominal pain, etc.) for Enteroviruses, flu syndrome for Adenoviruses and respiratory signs for Coronaviruses (Severe Acute Respiratory Syndrome) [1,2]. Viral conjunctivitis is a pathology almost always benign, in more than 70% of cases it cured without medical treatment. If the visual prognosis is often good however the vital prognosis can be engaged when the virus is responsible for the severe attacks of noble organs [3-6]. In the equatorial zone of which Congo-Brazzaville is a part, from September to March, an epidemic of Adenovirus influenza accompanies the transition from the dry season to the rainy season. Why we have to make the difference between Adenovirus conjunctivitis and conjunctivitis due to covid-19?

Objective of the Study

The objective of this survey was to determine the prevalence of cases of covid-19 in patients suspected of suffering from seasonal conjunctivitis caused by Adenovirus.

Materials and Methods

It was an analytical cross-sectional study carried out from September 2020 to March 2021 (7 months) at the Clinique Médicale Optique in Brazzaville. It concerned two groups of 105 patients each (G1 and G2). All of these patients were treated for viral conjunctivitis. Patients in the G2 group were contact subjects, that is, someone close to them has been or is being treated for covid-19 disease. In both groups the prevalence of covid-19 cases was compared. The antigen test was systematically performed for all participants. The antigen test was combined with the PCR test (G3 and G4) in the event of a negative result. These tests were carried out by the same laboratory and using the same techniques. The statistical tests used were the prevalence ratio (Rp) with its 95% confidence interval for a significance threshold (p) less than 0.05.

Results

The mean age was 55 ± 4.5 years [48 years - 76 years] G1 vs 59 ± 3.5 years [42 years - 81 years]. The sex ratio was equal to 1.1 G1 vs 0.98 G2. Table 1 shows the results of the antigen test in the two groups. Table 2 shows the results of the PCR test in patients who tested negative with the antigen test (G3 and G4).

	Positive n (%)	Negative n (%)	Total N (%)
Group 1 (G1)	67 (63.8%)	38 (36.2%)	105 (100%)
Group 2 (G2)	71 (67.6%)	34 (32.4%)	105 (100%)
Rp [95%CI]	2.8 [0.5 - 2]	3.9 [0.9 - 3.1]	----
p	2.1	1.05	----

Table 1: Results of the covid-19 antigen test carried out between September 2020 and March 2021 for two groups of patients treated for viral conjunctivitis at the Clinique Médicale Optique (Brazzaville), G2 were contact subjects. Rp: Prevalence Ratio; P: Significance Threshold; CI: Confidence Interval.

	Positive n (%)	Negative n (%)	Total N (%)
Group 1 (G3)	18 (47.37%)	20 (52.63%)	38 (100%)
Group 2 (G4)	20 (57.14%)	14 (42.86%)	34 (100%)
Rp [95%CI]	4.3 [0.7 - 2.8]	2.9 [0.8 - 5.1]	----
p	3.4	3.2	----

Table 2: Results of the covid-19 PCR test carried out between September 2020 and March 2021 for two groups of patients treated for viral conjunctivitis at the Clinique Médicale Optique (Brazzaville), the antigen test was negative for these patients G4 were contact subjects. Rp: Prevalence Ratio; P: Significance Threshold; CI: Confidence Interval.

Discussion

The covid-19 pandemic has already claimed millions of lives [7,8]. In addition to the threefold strategy of WHO of tracing, screening and isolating, there is now vaccination. But it is still very low in poor countries that depend on the COVAX initiative [9]. Laboratory diagnosis (antigen test, PCR) confirms cases of covid-19 disease and helps to trace and to isolate contacts [2,8].

Several studies have shown that in addition to serious systemic damage, covid-19 disease can sometimes be accompanied by conjunctivitis. During epidemic periods, cases of seasonal viral conjunctivitis caused by Adenovirus develop in parallel with those of covid-19 disease. These two conjunctivitis are clinically difficult to differentiate [1,10].

During these conjunctivitis the ocular signs are dominated by abundant secretions which stick the eyelashes, conjunctival redness or even conjunctival hemorrhages as well as chemosis [1,11]. The flu-like syndrome common to both types of conjunctivitis is sometimes associated with ageusia and anosmia which are more common in covid-19 disease.

Conclusion

The prevalence of covid-19 cases in populations suspected of having seasonal Adenovirus conjunctivitis is similar to that of contact subjects. Systematic antigen testing should be done to reinforce the Trace-Test-Isolate strategy. This strategy remains an effective measure, inexpensive and accessible to countries with very low anti-covid-19 vaccination rates.

Conflicts of Interest

There are no conflicts of interest.

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