Original Article

A Random Trial Comparing Mitomycin C and Autograft of Conjunctiva After Excision of Primary Pterygium

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ABSTRACT

Objective: To study a random trial comparing mitomycin C and autograft of conjunctiva after excision of primary pterygium

Study Design: Prospective study

Place and Duration of Study: This study was conducted at the Sahara Medical College, Narowal and Imran Idris Teaching Hospital Sialkot Medical College, Sialkot during Jan 2019 to April 2020.

Materials and Methods: Prospective work on successive cases of primary pterygium (Jan 2019 to April 2020) random into two adjuvant groups: (1) During operation zero point zero two percent mitomycin C for five minutes or (2) LCAU. Patients were followed for occurring again (defined as consisting of fibers and conducting cells tissue invading the cornea >one point five mm) and problems for a period of one year. The written informed consent was taken before taking history and examination. Ethical Committee Permission was consider before collecting the findings and get publishing in Medical Journal. The findings were analyzed for results by SPSS version 20.

Results: One fifty eyes in one fifty patients who completed the study were random to receive mitomycin C (n=seventy five) and LCAU (n=seventy five). There were twenty again occurring (thirteen point thirty three percent) in the mitomycin C group and only one again occurring (zero point six percent) in the LCAU group. There was a statistically significant difference in the occurring again rate between the two groups (p=zero point zero four). There were a total of three cysts of conjunctiva, three symblepharon, one a mass of granulation tissue, and one dent. No other visually significant issues were seen in either group.

Conclusion: This study indicated that LCAU has given good findings in terms of success but it does not give better results in cases of recurrence. Simple excising followed by Mitomycin C or LCAU are both without causing death effects and appreciative for pterygium excision.

Key Words: Pterygium, Conjunctival Limbal Autograft, Mitomycin C

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INTRODUCTION

Pterygium is a international condition with a "pterygium belt" between the parallel thirty degree north and south of the equator.[1] Pterygium is incidence in Hong Kong, situated twenty two degree north of the equator.[2] Situated beyond the visible spectrum at its violet end exposure is a major danger factor for its growth.[3]

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Simple excising have a high occurring again rate ranging from twenty four percent to eighty nine percent.[4] The adding of mitomycin C of various dilution has been noted to be constructive in stopping occurring again.5–7 However, mitomycin C may result in wasting problems such as scleral death of cells and microbial contaminations.[8–12,7,13–15]

Many works comparing mitomycin C with centigrams have been published. However, in the meaning of findings, it is important to compare the following: (1) primary or occurring again pterygium; (2) during operation or after operation mitomycin C; (3) simple centigrams or LCAU. Based on published findings from previous works, LCAU appears to be more constructive in the stopping of pterygium occurring again. However, to the best of our knowledge, no probable work has directly compared during operation mitomycin C with LCAU for primary pterygium. We therefore set out to do a probable random trial to guess the relative constructive these two adjuvants.

MATERIALS AND METHODS

Prospective work on successive cases of primary pterygium (Jan 2019 to April 2020) random into two adjuvant groups: (1) During operation zero point zero two percent mitomycin C for five minutes or (2) LCAU. Patients were followed for occurring again (defined as consisting of fibers and conducting cells tissue invading the cornea >one point five mm) and problems for a period of one year. The written informed consent was taken before taking history and examination. Ethical Committee Permission was consider before collecting the findings and get publishing in Medical Journal. The findings were analyzed for results by SPSS version 20.

Inclusion criteria: All the patients of conjunctival autograft after excision of primary pterygium.

Exclusion criteria: Collagen vascular disease or other autoimmune disease, pregnancy, pathology of ocular surface or contamination, previous surgery of limbus, and double head pterygium were excluded.

RESULTS

One fifty eyes in one fifty patients who completed the study were random to receive mitomycin C (n=seventy five) and LCAU (n=seventy five). There were twenty again occurring (thirteen point thirty three percent) in the mitomycin C group and only one again occurring (zero point six percent) in the LCAU group. There was a statistically significant difference in the occurring again rate between the two groups (p=zero point zero four). There were a total of three cysts of conjunctiva, three symblepharon, one a mass of granulation tissue, and one dent. No other visually significant issues were seen in either group.

The mean age was fifty eight point zero six ± fourteen point sixty seven in MMC and fifty nine point ninety six ± ten point five in LCAU and fifty eight point ninety eight ± twelve point ninety three in MMC + LCAU and p value was zero point sixty eight.

Table No. 1. Demographic and clinical data of patients in group 1 mitomycin C and group 2 (LCAU)

Age (years)	MMC (n=75)	LCAU (n=75)	MMC+LCAU (n=150)	p Value
Mean age (years)	58.06 ± 14.67	59.96 ± 10.5	58.98 ± 12.93	0.68
Age range (years)	32–84	39–81	32–84	
Sex				
Male	28(37.33%)	30(40%)	58(38.66%)	
female	47(62.66%)	45(60%)	92(61.33%)	
Laterality				
Right	35(46.66%)	30(40%)	65(43.33%)	
Left	40(53.33%)	45(60%)	85(56.66%)	
Follow up (months)	16.17 ± 3.47	16.73 ± 4.01	16.43 ± 3.71	0.427
Mean size of pterygium across limbus in length(mm)	4.183 ± 1.375	3.962 ± 1.240	4.083 ± 1.314	0.372
Preoperative BCVA (LogMAR)	0.4234 ± 0.3644	0.3380 ± 0.2514	0.3850 ± 0.3199	0.154
Postoperative BCVA 1 year (LogMAR)	0.2870 ± 0.3035	0.2325 ± 0.2149	0.2624 ± 0.2674	0.277

Table No. 2: Number of recurrences of mitomycin C v LCAU groups

Months	MMC (n=75)	LCAU (n=75)	MMC+LCAU(n=150)
3 months	2(10%)	2 (28.57%)	4 (18.18%)
6 months	8(40%)	2 (28.57%)	8 (36.36%)
9 months	4(20%)	1 (14.28%)	4 (18.18%)
1year	6(30%)	2 (28.57%)	6 (27.27%)
Total	20(13.33%)	07(4.66%)	22(14.66%)

The male in MMC was 28(37.33%) and LCAU 30(40%), MMC+LCAU 58(38.66%) and in female patients MMC was 47(62.66%) and LCAU 45(60%), MMC+LCAU 92(61.33%). Right eye of the patients there was 35(46.66%) in MMC and LCAU 30(40%) and MMC+LCAU 65(43.33%) and in left eye 40(53.33%) in MMC and LCAU 45(60%) and MMC+LCAU 85(56.66%). The follow up (month) was 16.17 ± 3.47 in MMC and LCAU 16.73 ± 4.01 and MMC+LCAU 16.43 ± 3.71 and p-value 0.427. Mean size of pterygium across limbus in length (mm) 4.183 ± 1.375 MMC and LCAU 3.962 ± 1.240 and MMC+LCAU 4.083 ± 1.314 and p-value 0.372. Preoperative BCVA (Log MAR) 0.4234 ± 0.3644 MMC and LCAU 0.3380 ± 0.2514and MMC+LCAU 0.3850 ± 0.3199 and p-value 0.154. Postoperative BCVA 1 year (Log MAR) 0.2870 ± 0.3035 MMC and LCAU 0.2325 ± 0.2149 and MMC+LCAU 0.2624 ± 0.2674and p-value 0.277 as shown in table 1.

There were ten occurring again (fifteen point nine percent) in the mitomycin C group—1 at three months, four at six months, two at nine months, and three at twelve months (table 2). There was only one occurring again (one point nine percent) in the LCAU group identified at three months and the difference in occurring again rates was statistically significant (p=zero point zero four). There were three cysts of conjunctiva (two mitomycin C, one LCAU), three symblephara (two mitomycin C, one LCAU), one granuloma mitomycin C, and one dellen mitomycin C. No scleral thinning, necrosis, or any other visually significant complications were encountered in either group as shown in table no 2.

DISCUSSION

Mitomycin C is an process of introducing one or more alkyl groups, inhibit the development of a cancer agent which prevents cellular division and multiplication by inhibiting Doxy Nuclic Acid formation. Products of its ability to produce desired output would include the stage at which Mitomycin C is applied and whether the sclera is covered with conjunctiva. Intra operation Mitomycin C is required and the present treatment of zero point zero two percent Mitomycin C for five minutes has been found to be prefered.[5,6] An repeatedly to prove outcome is the application of CG.[6,11] The epithelium of limbus was added in the CG would help to replace its stopping function. Present study on LCAU noted its orderliness in the stopping of pterygial occurring again (zero to twelve point five percent).[7,13–15] Al Fayez compared CG with LCAU (including primary and occurring again cases) and noted superior effective for occurring again pterygia (no significant benefit for primary). However, one should note that no occurring again occurred in the LCAU group and the sample size was small.[13] As LCAU may be more efficient than CG, we therefore conducted the first random trial to directly compare the efficient of Mitomycin C with LCAU.

The Mitomycin C occurring again rate was fifteen point nine percent, in comparison with thirty eight percent noted by Chen et al[11] and ten point five percent by Manning et al with the application of zero point four mg/ml for three minutes.[15-19]

CONCLUSION

This study indicated that LCAU has given good findings in terms of success but it does not give better results in cases of recurrence. Simple excising followed by Mitomycin C or LCAU are both without causing death effects and appreciative for pterygium excision.

Author's Contribution:

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Revisiting Critically:	Shahid Anwar Bhatti, Tanveer Ahmad
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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