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EPOMEC
EXPANDING VISION

Incidence and Severity of Ocular Graft versus Host Disease in Oman

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SQUH

- Inherited blood disorders such as Sickle Cell Disease and Thalassemia are among the most prominent health concerns in Oman.
- A survey conducted by ministry of health (MOH) in 2003 revealed that the prevalence of total haemoglobinopathies in Oman was 9.5 per cent.

- Allogeneic Hematopoietic stem cell transplantation (allo-HSCT) is currently an integral part in the curative management of these inherited hematologic disorders, as well as hematological malignancies and various inherited and autoimmune diseases (primary immunodeficiency)
- As any treatment procedure, Hematopoietic stem cell transplantation (HSCT) has its risks.

- Graft-versus-host-disease (GVHD), which occurs when donated cells attack a person's tissues, remains the major reason for non-relapse morbidity and mortality in patients undergoing allo-HSCT.
- GVHD has the potential to affect all mucosal surfaces, including ocular, oral, vaginal, and gastrointestinal areas.
- The incidence of Ocular GVHD varies widely in different studies but mostly >50%.
- Ocular GVHD typically develops 6 to 9 months post allo-HSCT.
- Manifestations of ocular GVHD range from mild conjunctivitis to severe keratoconjunctivitis sicca (KCS), and corneal perforation

AIM

- To study the incidence and spectrum of severity of ocular in GVHD in Oman

Patients

- The electronic medical records of 181 patients who undergone BMT from duration of January 2013 to December 2017 were reviewed. Sixty-six patients met the inclusion criteria.

Scheme of Evaluation

- Ocular Surface Disease Index (OSDI) was used to subjectively assess the severity of GVHD. The OSDI consists of 12 patient-reported questions related to dry eye and is a valid and reliable instrument for measuring dry eye disease

OSDI

Ocular Surface Disease Index© (OSDI©)[2]

Ask your patients the following 12 questions, and circle the number in the box that best represents each answer. Then, fill in boxes A, B, C, D, and E according to the instructions beside each.

Have you experienced any of the following *during the last week*?	All of the time	Most of the time	Half of the time	Some of the time	None of the time
1. Eyes that are sensitive to light? . .	4	3	2	1	0
2. Eyes that feel gritty?	4	3	2	1	0
3. Painful or sore eyes?	4	3	2	1	0
4. Blurred vision?	4	3	2	1	0
5. Poor vision?	4	3	2	1	0

Subtotal score for answers 1 to 5 (A)

Have problems with your eyes limited you in performing any of the following *during the last week*?	All of the time	Most of the time	Half of the time	Some of the time	None of the time	N/A
6. Reading?.	4	3	2	1	0	N/A
7. Driving at night?	4	3	2	1	0	N/A
8. Working with a computer or bank machine (ATM)?.	4	3	2	1	0	N/A
9. Watching TV?	4	3	2	1	0	N/A

Subtotal score for answers 6 to 9 (B)

Have your eyes felt uncomfortable in any of the following situations *during the last week*?	All of the time	Most of the time	Half of the time	Some of the time	None of the time	N/A
10. Windy conditions?.	4	3	2	1	0	N/A
11. Places or areas with low humidity (very dry)?	4	3	2	1	0	N/A
12. Areas that are air conditioned?. . .	4	3	2	1	0	N/A

Subtotal score for answers 10 to 12 (C)

Add subtotals A, B, and C to obtain D
(D = sum of scores for all questions answered) (D)

Total number of questions answered
(do not include questions answered N/A) (E)

Please turn over the questionnaire to calculate the patient's final OSDI© score.

Ocular Surface Disease Index® (OSDI®)[2]

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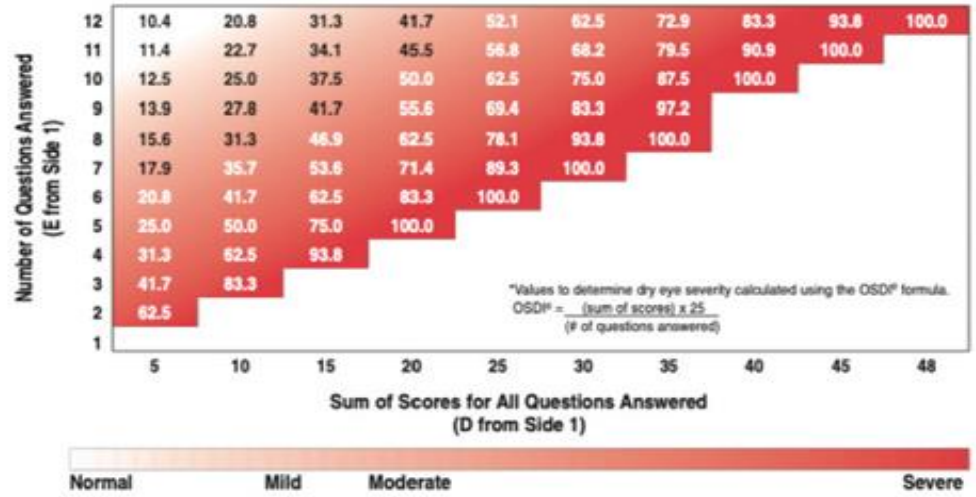
Please turn over the questionnaire to calculate the patient's final OSDI® score.

Evaluating the OSDI® Score[1]

The OSDI® is assessed on a scale of 0 to 100, with higher scores representing greater disability. The index demonstrates sensitivity and specificity in distinguishing between normal subjects and patients with dry eye disease. The OSDI® is a valid and reliable instrument for measuring dry eye disease (normal, mild to moderate, and severe) and effect on vision-related function.

Assessing Your Patient's Dry Eye Disease[1, 2]

Use your answers D and E from side 1 to compare the sum of scores for all questions answered (D) and the number of questions answered (E) with the chart below.* Find where your patient's score would fall. Match the corresponding shade of red to the key below to determine whether your patient's score indicates normal, mild, moderate, or severe dry eye disease.



Patient's Name: _____ **Date:** _____

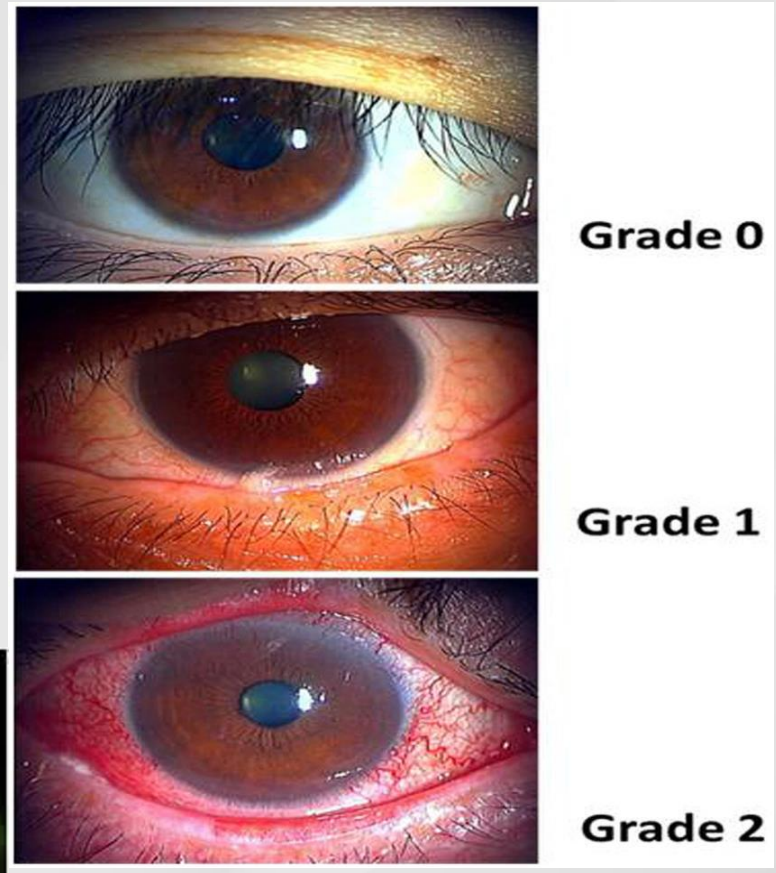
How long has the patient experienced dry eye disease? _____

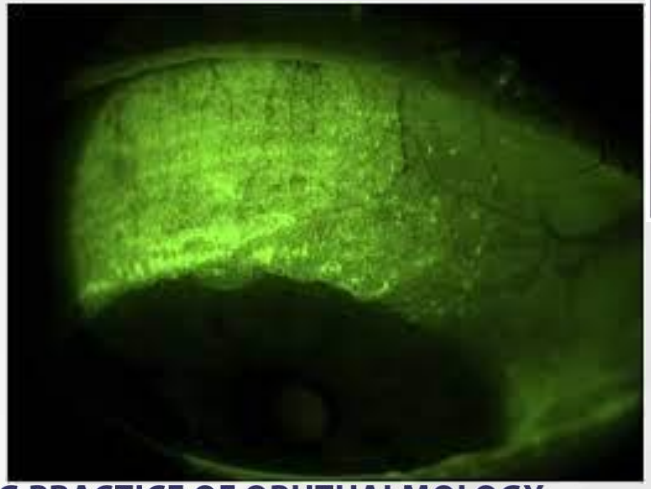
Eye Care Professional's Comments: _____

1. Data on file, Allergan, Inc.
2. Schiffman RM, Christianson MD, Jacobsen G, Hirsch JD, Reis BL. Reliability and validity of the Ocular Surface Disease Index. *Arch Ophthalmol.* 2000;118:615-621

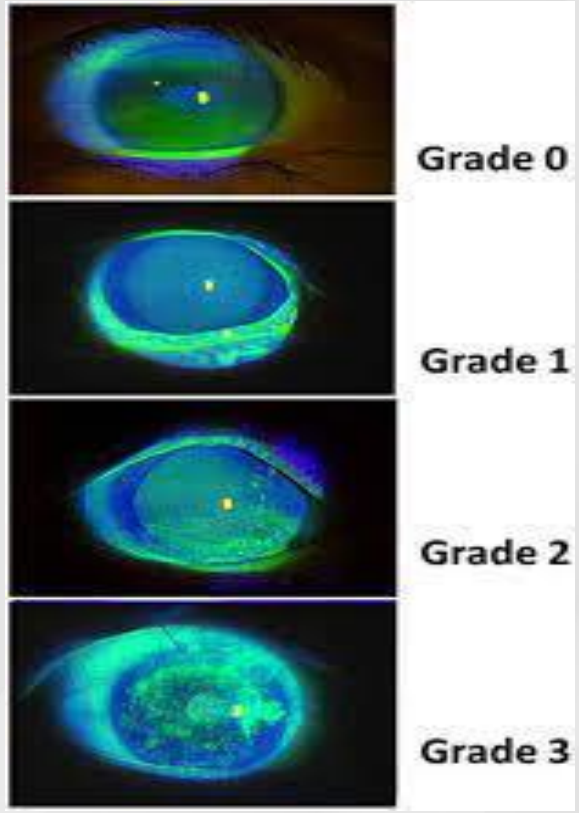
Objective Ophthalmological Workup:

- visual acuity test
- Schirmer test.
- Conjunctival assessment
  - Grading of injection
  - Conjunctival staining

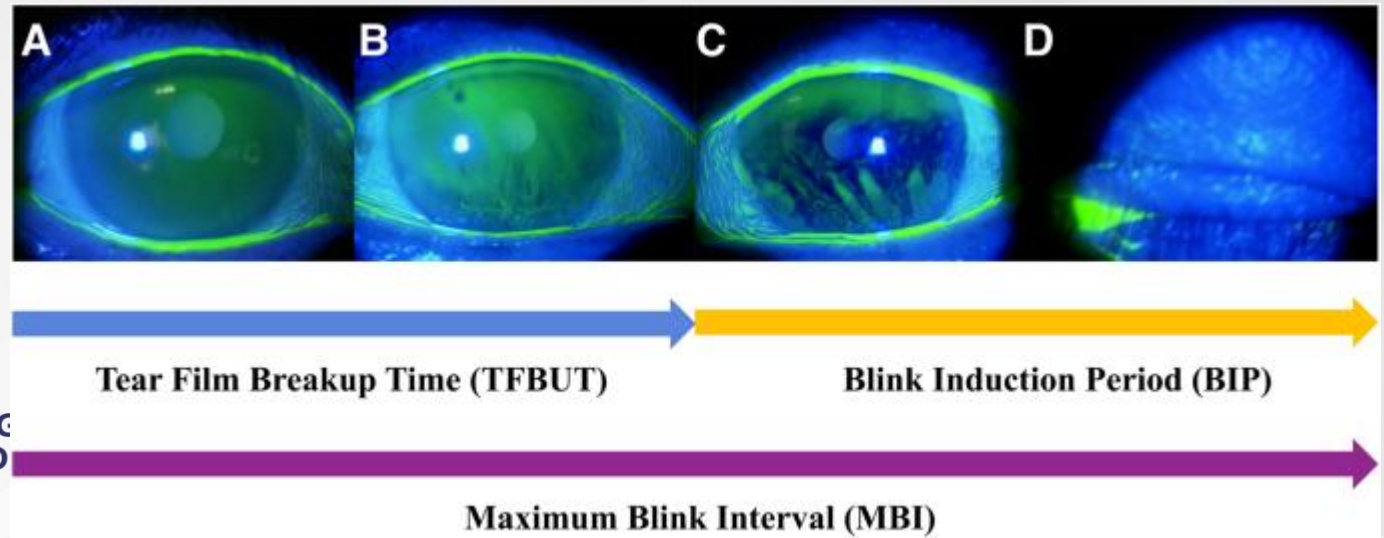




- Corneal Surface Integrity Assessment using Fluorescein Corneal Staining,



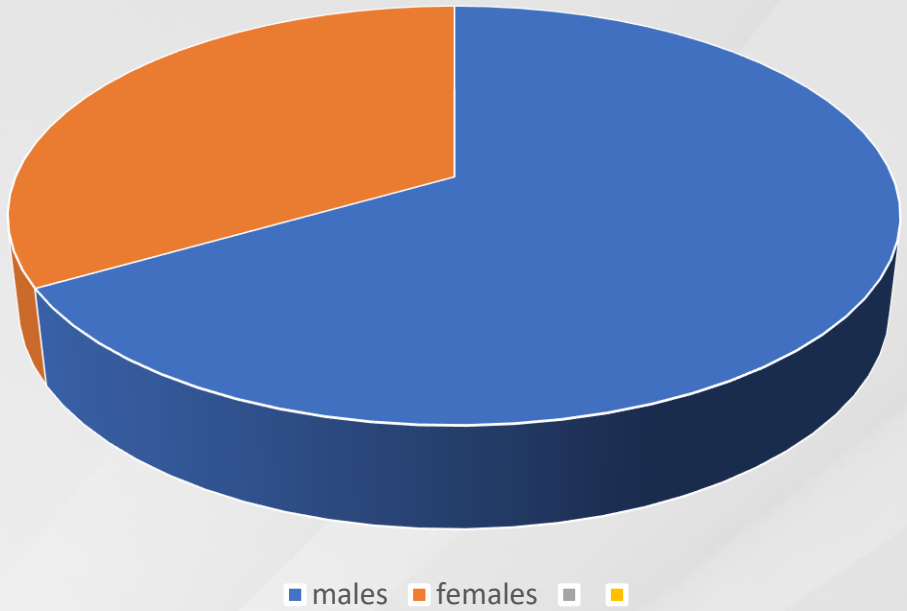
- Tear Film Stability Assessment using tear film breakup time (TBUT)



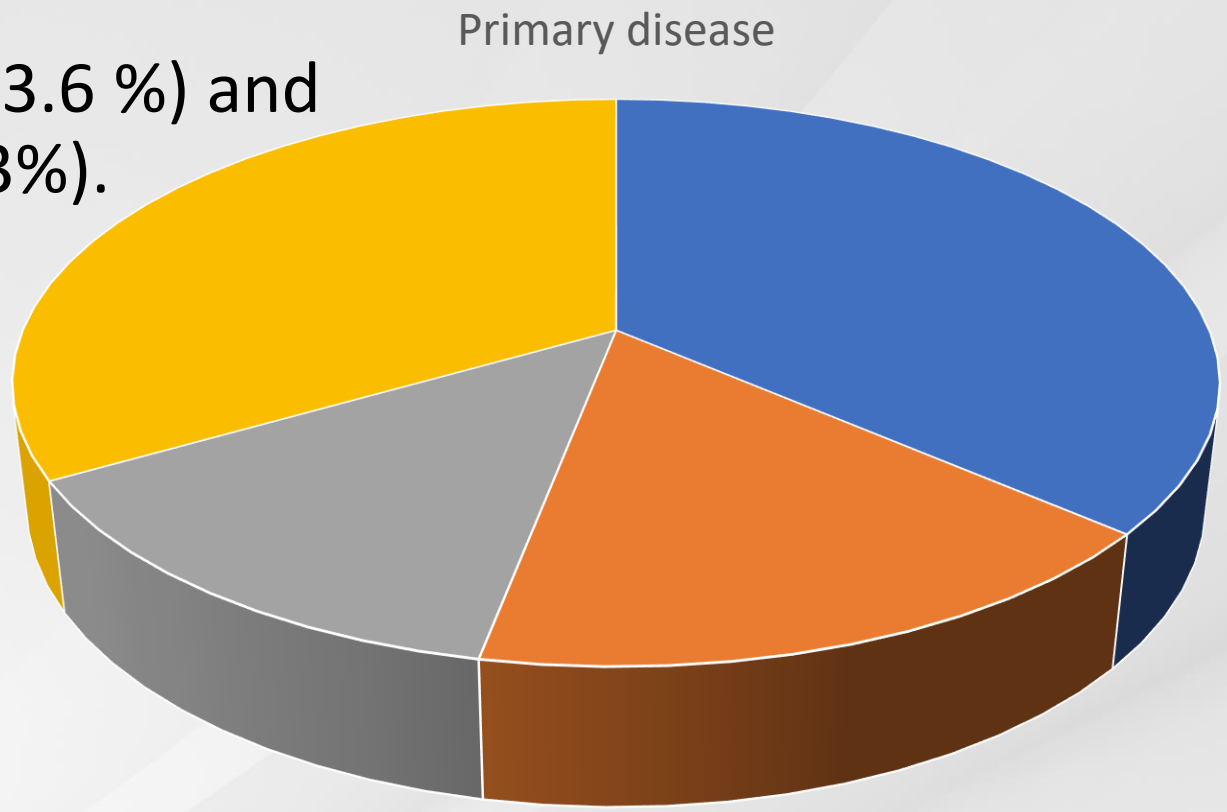
Demographic data

- 44 males and 22 were females.

- The mean age of the patients at the time of transplant was 21 years (SD :8.75)



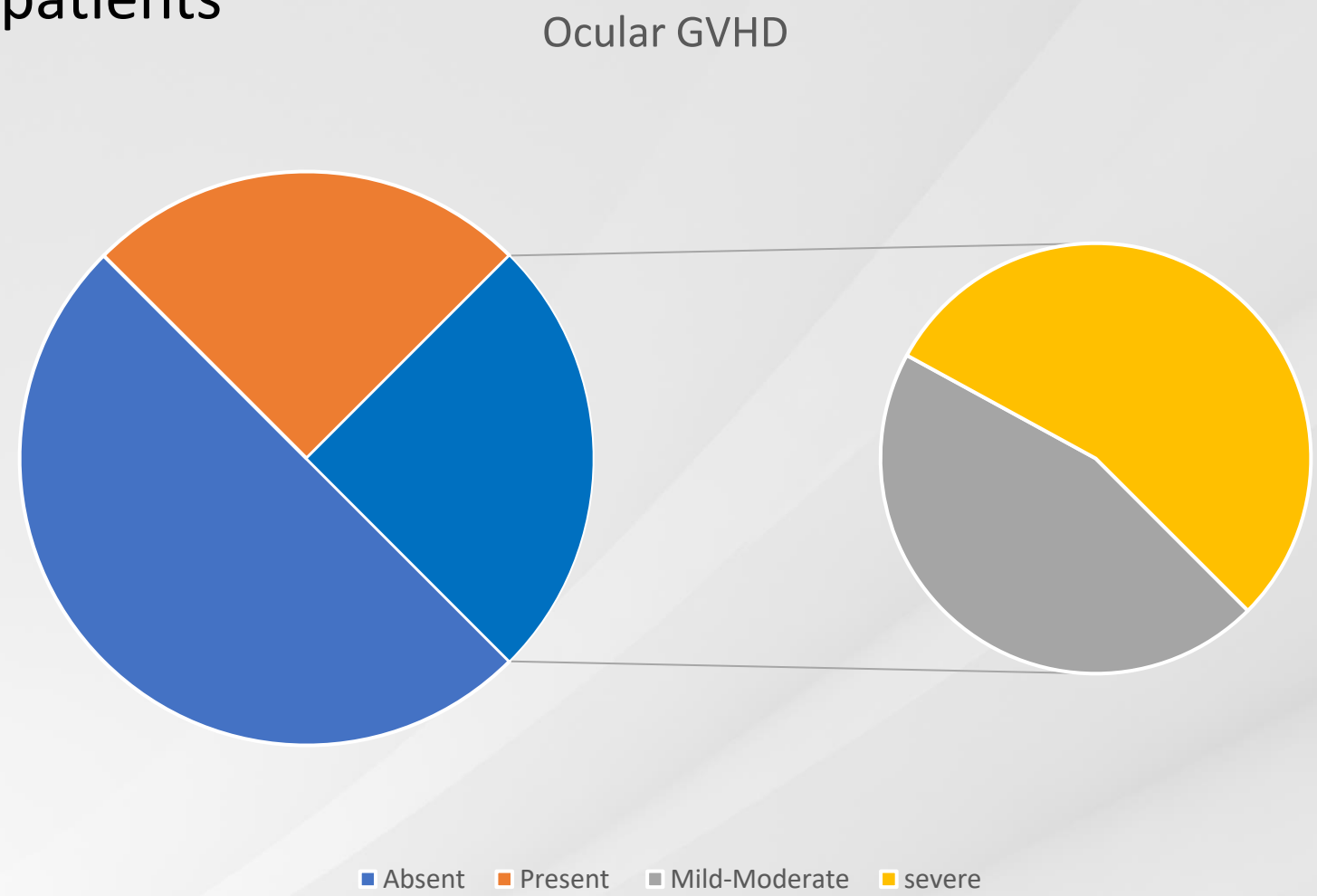
- The most common primary disease for which transplant was done was sickle cell disease in 24 patients(36.4%), followed by ALL in 11 patients (16.7%) , then thalassemia major in 9 patients (13.6 %) and other diseases in 22 patients (33.3%).



Donor Data

- All Donors were HLA matched relatives (65 cases) except one patient who received transplant from un-related HLA matched donor and happened to develop ocular GVHD.
- The mean age of the donors at the transplant was 23.67 years with SD of 12.83 years

- Ocular GVHD was present in 22 patients (33.3%)
- It was mild to moderate in 10 patients
- Severe in 22 patients



- Ocular GVHD was associated with other systemic GVHD in 18 Patients (81.8%)

- Oral , GIT and liver GVHD are the most commonly associated types

  - Oral GVHD was present in 7 patients (31.8%) compared to 2 patients (4.5%) without ocular GVHD (P value: 0.005)

  - GIT GVHD was present in 10 patients (45.5%) compared to 4 patients (9.1%) without ocular GVHD (P value: 0.001)

  - Liver GVHD was present in 10 patients (45.5%) compared to 7 patients (15.9%) without ocular GVHD (P value: 0.016)

- A history of acute GVHD was not associated with significant increase of development of chronic ocular GVHD (P value: 0.233)

- There was no statistically significant difference between patients who developed ocular GVHD and those who haven’t in terms of

  - Gender of donor , recipient and presence of gender difference (P:0.787, 0.377, 0.280 respectively)
  - The primary disease (P:0.322)
  - ABO blood grouping in recipients and donors:(P:0.442, 0.159 respectively)
  - ABO compatibility(P: 0.463)

Conclusion

- Chronic ocular GVHD is a common complication of Allogeneic Hematopoietic stem cell transplantation occurring in 33.3% of the patients in the present study.
- It is mostly associated with Oral , GIT and liver GVHD.
- History of acute GVHD was not associated with an increased risk of developing chronic ocular GVHD.

Thank you